INVENTOR SEARCH

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=> d his 188

     (FILE 'CASREACT' ENTERED AT 11:56:06 ON 23 OCT 2007)
L88          15 S L87 AND L21

=> d que 188
L21             QUE  ABB=ON  PLU=ON  PY<20043 OR PRY<2004 OR AY<2004 OR
                 MY<2004 OR REVIEW/DT
L54          70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "OXENO OLEFINCHEMIE G
                M B H GERMANY"/PA,CS,SO,CO
L56             QUE  ABB=ON  PLU=ON  FRIDAG D?/AU
L57             QUE  ABB=ON  PLU=ON  MOELLER O?/AU
L58             QUE  ABB=ON  PLU=ON  MOLLER O?/AU
L59             QUE  ABB=ON  PLU=ON  ORTMANN D?/AU
L60             QUE  ABB=ON  PLU=ON  ("WIESE K"/AU OR "WIESE K D"/AU OR
                 "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE
                KLAUS DIETHER"/AU)
L82          21 SEA FILE=CASREACT ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU
                OR "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR
                "WIESE, KLAUS-DIETHER"/AU)
L83          30 SEA FILE=CASREACT ABB=ON  PLU=ON  (L56 OR L57 OR L58
                OR L59 OR L60)
L84          30 SEA FILE=CASREACT ABB=ON  PLU=ON  L82 OR L83
L85           8 SEA FILE=CASREACT ABB=ON  PLU=ON  L84 AND L54
L86          10 SEA FILE=CASREACT ABB=ON  PLU=ON  L84 AND ?PHOSPHOR?
L87          15 SEA FILE=CASREACT ABB=ON  PLU=ON  (L85 OR L86)
L88          15 SEA FILE=CASREACT ABB=ON  PLU=ON  L87 AND L21


=> d his 166

     (FILE 'HCAPLUS' ENTERED AT 11:45:12 ON 23 OCT 2007)
L66          34 S L65 AND L21

=> d que 166
L21             QUE  ABB=ON  PLU=ON  PY<20043 OR PRY<2004 OR AY<2004 OR
                 MY<2004 OR REVIEW/DT
L53          55 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU OR
                "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR
                "WIESE, KLAUS-DIETHER"/AU)
L54          70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "OXENO OLEFINCHEMIE G
                M B H GERMANY"/PA,CS,SO,CO
L55          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L53 AND L54
L56             QUE  ABB=ON  PLU=ON  FRIDAG D?/AU
L57             QUE  ABB=ON  PLU=ON  MOELLER O?/AU
L58             QUE  ABB=ON  PLU=ON  MOLLER O?/AU
L59             QUE  ABB=ON  PLU=ON  ORTMANN D?/AU
L60             QUE  ABB=ON  PLU=ON  ("WIESE K"/AU OR "WIESE K D"/AU OR
                 "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE
                KLAUS DIETHER"/AU)
L62         203 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L56 OR L57 OR L58 OR
                L59 OR L60)
L63          25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND L54
L64          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND ?PHOSPHOR?
L65          34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 OR L63 OR L64
L66          34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND L21


=> dup rem 188 166
FILE 'CASREACT' ENTERED AT 12:00:36 ON 23 OCT 2007
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
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FILE 'HCAPLUS' ENTERED AT 12:00:36 ON 23 OCT 2007
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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

PROCESSING COMPLETED FOR L88
PROCESSING COMPLETED FOR L66
L90 34 DUP REM L88 L66 (15 DUPLICATES REMOVED)
ANSWERS '1-15' FROM FILE CASREACT
ANSWERS '16-34' FROM FILE HCAPLUS

INVENTOR SEARCH RESULTS

=> d l90 1-34 ibib ab

L90 ANSWER 1 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 145:82992 CASREACT Full-text
TITLE: Catalytic dimerization method for the production of unbranched and acyclic octatrienes from 1,3-butadiene
INVENTOR(S): Beller, Matthias; Jackstell, Ralf; Surendra, Harkal; **Ortmann, Dagmara**; Nierlich, Franz
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006063892	A1	20060622	WO 2005-EP55419	20051020
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
DE 102004060520	A1	20060622	DE 2004-102004060520 20041216	
AU 2005315749	A1	20060622	AU 2005-315749	20051020
CA 2591398	A1	20060622	CA 2005-2591398	20051020
EP 1824802	A1	20070829	EP 2005-808031	20051020
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				

PRIORITY APPLN. INFO.: DE 2004-102004060520 41216

WO 2005-EP55419 20051020

OTHER SOURCE(S): MARPAT 145:82992

AB Unbranched, acyclic octatrienes (e.g., 1,3,7-octatriene) are prepared in high yield and selectivity by the dimerization of 1,3-butadiene in the presence of a secondary alc. (e.g., cyclohexanol), a base (e.g., sodium cyclohexanolate), and as the catalyst a carbene ligand [I; R1, R2 = C1-3 alkyl; R3, R4 = H, C1-3 alkyl; e.g., 1,3-bis(2,6-diisopropylphenyl)-4,5-dimethyl-2- dehydro-3-hydroimidazole] which contains a Group VIIIB metal (e.g., Pd).

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 2 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 145:315080 CASREACT Full-text
TITLE: O-acylphosphites: new and promising ligands for isomerizing hydroformylation
AUTHOR(S): Selent, Detlef; **Wiese, Klaus-Diether**; Boerner, Armin

CORPORATE SOURCE: Leibniz-Institut fuer Organische Katalyse, Rostock, D-18055, Germany
SOURCE: Chemical Industries (Boca Raton, FL, United States) (**2005**), 104(Catalysis of Organic Reactions), 459-469
CODEN: CHEIDI; ISSN: 0737-8025
PUBLISHER: CRC Press LLC
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Bidentate **phosphorus** ligands bearing an O-acyl phosphite moiety show superior modifying properties to the rhodium catalyst used in the hydroformylation of internal olefins. Results obtained for the hydroformylation of internal octenes and 2-pentene, resp., are presented. The new ligands do markedly enhance the isomerization activity of the rhodium center. Internal hydroformylation is clearly disfavored. At 120 °C/20 bar CO/H2, a predominant terminal reaction is achieved. Thus, a 0.65...0.8 M fraction of the desired terminal product is obtained with an aldehyde chemoselectivity exceeding 99.7%. Depending on the ligand structure and the olefinic substrate used, excellent turn over frequencies between 3000 and 7000 h-1 have been estimated Further results concerning the coordination behavior of the new ligands towards the precatalyst [acacRh(COD)] itself, as well as high pressure NMR investigations in the formation of O-acylphosphite-phosphite hydrido rhodium complexes, are presented.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 3 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 140:217293 CASREACT Full-text
TITLE: hydroformylation of olefins in the presence of Group 8-10 metal catalysts and cyclic carbonate esters
INVENTOR(S): **Moeller, Oliver; Fridag, Dirk**; Borgmann, Cornelia; Hess, Dieter; **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10327434	A1	20040304	DE 2003-10327434	20030618
CA 2496838	A1	20040311	CA 2003-2496838	20030807
WO 2004020380	A1	20040311	WO 2003-EP8736	20030807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003253389	A1	20040319	AU 2003-253389	20030807
EP 1532094	A1	20050525	EP 2003-790872	20030807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003013866	A	20050705	BR 2003-13866	20030807
CN 1678557	A	20051005	CN 2003-820194	20030807
JP 2005536560	T	20051202	JP 2004-532060	20030807

MX 2005PA02283	A	20050608	MX 2005-PA2283	20050228
ZA 2005001710	A	20050906	ZA 2005-1710	20050228
IN 2005CN00280	A	20070907	IN 2005-CN280	20050228
US 2006241324	A1	20061026	US 2006-525376	20060508
PRIORITY APPLN. INFO.:			DE 2002-10240253	20020831
			DE 2003-10327434	20030618
			WO 2003-EP8736	20030807

OTHER SOURCE(S): MARPAT 140:217293

AB C3-24 olefins were hydroformylated in the presence of ≥1 Group 8-10 metal catalyst, ≥0.1 mol% cyclic carbonate [I; R1-R4 = H, (substituted) (cyclic) (aromatic) C1-27 hydrocarbyl; n = 0-5; X = (substituted) (cyclic) (aromatic) hydrocarbylene], and ≥1 ligand not containing sulfonic acid or sulfonate groups. Thus, a mixture of propylene carbonate, rhodium nonanoate, tris(2,4-di-tert-butylphenyl)phosphite, and 1-octene was autoclaved at 100° under 20 bar H2/CO for 50 min. to give 49.4% n-nonanal. An apparatus diagram is given.

L90 ANSWER 4 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 139:383057 CASREACT Full-text
TITLE: Method for producing C13-alcohol mixtures
INVENTOR(S): Kaizik, Alfred; Toetsch, Walter; Droste, Wilhelm; Bueschken, Wilfried; Roettger, Dirk; **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003095402	A1	20031120	WO 2003-EP3066	20030325
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10220799	A1	20031211	DE 2002-10220799	20020510
AU 2003216879	A1	20031111	AU 2003-216879	20030325
EP 1515934	A1	20050323	EP 2003-712086	20030325
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1653023	A	20050810	CN 2003-810596	20030325
JP 2005532317	T	20051027	JP 2004-503426	20030325
ZA 2004010000	A	20060628	ZA 2004-10000	20041209
US 2005234270	A1	20051020	US 2005-513360	20050420
US 7138552	B2	20061121		
PRIORITY APPLN. INFO.:			DE 2002-10220799	20020510
			WO 2003-EP3066	20030325

AB A method for producing a C13-alc. mixture, useful as a precursor for the production of surfactants and plasticizers (no data), comprises: (A) the trimerization of butene-containing hydrocarbon mixts using a Ni-supported catalyst; (B) separation of the C12-olefin fraction from the reaction mixture; (C) hydroformylation of the C12 olefins

using a modified Rh catalyst; (D) separation of the hydroformylation catalyst; and (E) hydrogenation of the hydroformylation product to give C13 alcs.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 5 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 138:305804 CASREACT Full-text
TITLE: Production of 6-methyl-2-heptanone and its use
INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann, Guido
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003031383	A1	20030417	WO 2002-EP10873	20020927
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10149349	A1	20030417	DE 2001-10149349	20011006
AU 2002338820	A1	20030422	AU 2002-338820	20020927
EP 1440051	A1	20040728	EP 2002-777243	20020927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1564797	A	20050112	CN 2002-819785	20020927
JP 2005504839	T	20050217	JP 2003-534371	20020927
US 2004249218	A1	20041209	US 2004-490451	20040324
PRIORITY APPLN. INFO.:			DE 2001-10149349	20011006
			WO 2002-EP10873	20020927

OTHER SOURCE(S): MARPAT 138:305804

AB The invention relates to a method for producing 6-methyl-2-heptanone characterized by the steps of (a) hydroformylation of 2-methylpropene into 3-methylbutanal, (b) basic catalyzed aldol condensation of the 3-methylbutanal with acetone into 6-methyl-3-hepten-2-one, whereby the molar ratio of 3-methylbutanal to the base that is used is greater than 1:0.3, and (c) hydrogenation of the 6-methyl-3-hepten-2-one to obtain 6-methyl-2-heptanone.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 6 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 138:187924 CASREACT Full-text
TITLE: Preparation of new phosphite ligands and their metal complexes as hydroformylation catalysts for olefins
INVENTOR(S): Selent, Detlef; Boerner, Armin; Borgmann, Cornelia; Hess, Dieter; **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany

SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10140086	A1	20030227	DE 2001-10140086	20010816
WO 2003016321	A2	20030227	WO 2002-EP9050	20020813
WO 2003016321	A3	20031106		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002324051	A1	20030303	AU 2002-324051	20020813
EP 1423398	A2	20040602	EP 2002-758461	20020813
EP 1423398	B1	20060517		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1543470	A	20041103	CN 2002-816056	20020813
JP 2005500385	T	20050106	JP 2003-521243	20020813
EP 1586577	A1	20051019	EP 2005-105175	20020813
EP 1586577	B1	20061004		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR, BG, CZ, EE, SK				
AT 326474	T	20060615	AT 2002-758461	20020813
AT 341557	T	20061015	AT 2005-105175	20020813
ES 2261712	T3	20061116	ES 2002-2758461	20020813
ES 2271934	T3	20070416	ES 2005-5105175	20020813
US 2004236133	A1	20041125	US 2004-485811	20040210
US 7161020	B2	20070109		
MX 2004PA01350	A	20040505	MX 2004-PA1350	20040212
PRIORITY APPLN. INFO.:			DE 2001-10140086	20010816
			EP 2002-758461	20020813
			WO 2002-EP9050	20020813

OTHER SOURCE(S): MARPAT 138:187924

AB The preparation of title compds., I (R1-R4 = C1-50 un(substituted) aliphatic, alicyclic, aromatic, heteroarom., aliphatic-alicyclic, aliphatic-aromatic, heterocyclic, aliphatic-heterocyclic, H, F, Cl, Br, I, CF3, etc.; R5 = C1-50 (un)substituted aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, heteroarom., aliphatic-aromatic; k = 0, 1) and their metal complexes, useful as ligands for transition metal catalyzed olefin hydroformylation reactions, is described. Thus, phosphination of lithiated 2,4-di-tert-butylphenol with 2-chloro-4H-1,3,2- **benzodioxaphosphorin**-4-one gave the ligand cocatalyst for [Rh(1,5-cyclooctadiene)acac]-catalyzed hydroformylation of 1-octene.

L90 ANSWER 7 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 138:187923 CASREACT Full-text
TITLE: Preparation of new phosphite ligands and their metal complexes as hydroformylation catalysts for olefins
INVENTOR(S): Schmutzler, Reinhard; Neda, Ion; Kunze, Christine; Boerner, Armin; Selent, Detlef;

Borgmann, Cornelia; Hess, Dieter; **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany
SOURCE: Ger. Offen., 16 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10140083	A1	20030227	DE 2001-10140083	20010816
WO 2003016320	A1	20030227	WO 2002-EP8798	20020807
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002336082	A1	20030303	AU 2002-336082	20020807
EP 1417212	A1	20040512	EP 2002-769970	20020807
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1543469	A	20041103	CN 2002-816052	20020807
JP 2005500384	T	20050106	JP 2003-521242	20020807
MX 2004PA01348	A	20040505	MX 2004-PA1348	20040212
US 2004236134	A1	20041125	US 2004-485817	20040615
US 7009068	B2	20060307		
PRIORITY APPLN. INFO.:			DE 2001-10140083	20010816
			WO 2002-EP8798	20020807

OTHER SOURCE(S): MARPAT 138:187923

AB The preparation of title compds., I and II (R1-R4 = C1-50 un(substituted) aliphatic, alicyclic, aromatic, heteroarom., aliphatic-alicyclic, aliphatic-aromatic, heterocyclic, aliphatic-heterocyclic, H, F, Cl, Br, I, CF3, etc.; Q = C1-50 k binding (un)substituted aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, heteroarom., aliphatic-aromatic; Q = O, S) and their metal complexes, useful as ligands for transition metal catalyzed olefin hydroformylation reactions, is described. Thus, phosphination of 2-hydroxy-1-naphthalenecarboxylic acid with PCl3 in N-methyl-2-pyrrolidinone gave 91% phosphite ligand. Phosphination of lithiated p-tert-butylbis(dimethoxycalix[4]arene) with phosphite ligand gave the cocatalyst for [Rh(1,5- cyclooctadiene)acac]-catalyzed hydroformylation of 1-octene.

L90 ANSWER 8 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 8
ACCESSION NUMBER: 139:350842 CASREACT Full-text
TITLE: Reactions of a Hydroxy Phosphonite Ligand in the Coordination Sphere of Rhodium(I)
AUTHOR(S): Selent, Detlef; Baumann, Wolfgang; Kempe, Rhett; Spannenberg, Anke; Roettger, Dirk; **Wiese, Klaus-Diether**; Boerner, Armin
CORPORATE SOURCE: Leibniz-Institut fuer Organische Katalyse, Universitaet Rostock e. V., Rostock, 18055, Germany
SOURCE: Organometallics (**2003**), 22(21), 4265-4271
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The complexation behavior of 6-(3,3'-di-tert-butyl-5,5'-dimethoxy- 2-hydroxy-2'-oxybiphenyl)-6H-[c,e]-1,2-**oxaphosphorine**, which generates an active and n-regioselective rhodium(I) catalyst for the isomerizing hydroformylation of internal octenes, was studied. Investigations in the absence of CO/H2 revealed that coordination of the phenolate moiety of the hydroxy phosphonite on the rhodium center is possible. Interestingly, under conditions related to the hydroformylation (syngas, higher temperature and P:Rh ratios) the ligand suffers two transformations. The first is based on a transesterification reaction involving 2 equivalent of the hydroxy phosphonite, giving rise to a substituted biphenol and a sym. bidentate **phosphorus** ligand of a heretofore uncertain structure. The second transformation is concerned with a selective Rh(I)-catalyzed P-C bond cleavage of the initial phosphonite structure under the formation of a phosphite. X-ray structural analyses will illustrate the structures of rhodium(I) complexes bearing the original hydroxy phosphonite ligand, a phenoxy phosphonite chelate, and a phosphite formed by selective P-C bond cleavage, resp.

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 9 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 9

ACCESSION NUMBER: 137:154688 CASREACT Full-text

TITLE: Condensation of aldehydes with ketones to α,β-unsaturated ketones by multiphase reaction in a packed tube reactor

INVENTOR(S): Protzmann, Guido; **Wiese, Klaus-Diether** ; Bueschken, Wilfried

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1231199	A1	20020814	EP 2002-633	20020111
EP 1231199	B1	20050720		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10106186	A1	20020814	DE 2001-10106186	20010210
AT 299852	T	20050815	AT 2002-633	20020111
NZ 516986	A	20020927	NZ 2002-516986	20020201
BR 2002000319	A	20021029	BR 2002-319	20020204
TW 237633	B	20050811	TW 2002-91102061	20020206
HU 2002000461	A2	20020828	HU 2002-461	20020207
MX 2002PA01350	A	20040622	MX 2002-PA1350	20020207
CA 2370808	A1	20020810	CA 2002-2370808	20020208
NO 2002000650	A	20020812	NO 2002-650	20020208
AU 200215515	A	20020815	AU 2002-15515	20020208
AU 781210	B2	20050512		
ZA 2002001104	A	20020822	ZA 2002-1104	20020208
JP 2002284730	A	20021003	JP 2002-32317	20020208
CN 1369470	A	20020918	CN 2002-104597	20020209
US 2002161264	A1	20021031	US 2002-68955	20020211
US 6603047	B2	20030805		
PRIORITY APPLN. INFO.:			DE 2001-10106186	20010210

OTHER SOURCE(S): MARPAT 137:154688

AB R2CH:CR3C(O)R1 [R1, R2 = (branched) (saturated) (alicyclic) (substituted) C1-20 especially C1-16 group, (saturated) (substituted) alicyclic C5-12 group, araliph. C7-15 group preferably PhCH2, aromatic C group preferably Ph; R3 = H, aliphatic (substituted) C1-10 group; or R1R3 = alicyclic ring] were prepared by reacting an aldehyde R2CH(O) (R2 as above) with a ketone R3CH2C(O)R1 (R1, R3 as above) in liquid phase in a packed

tube reactor having a load factor of ≥0.8. Condensation of AcMe and 3-methylbutanal gave 86% 6-methyl-3-hepten-2-one in selectivity of 95%.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 10 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 136:401882 CASREACT Full-text
TITLE: Preparation of novel phosphinine compounds and their metal complexes as catalysts for hydroformylation reaction
INVENTOR(S): Roettger, Dirk; Hess, Diether; Boerner, Armin; Selent, Detlef; Kadyrov, Renat; **Wiese, Klaus-Dieter**; Borgmann, Cornelia
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany
SOURCE: Eur. Pat. Appl., 28 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1209164	A1	20020529	EP 2001-124864	20011018
EP 1209164	B1	20031210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10058383	A1	20020529	DE 2000-10058383	20001124
AT 256135	T	20031215	AT 2001-124864	20011018
ES 2208510	T3	20040616	ES 2001-1124864	20011018
US 2002103375	A1	20020801	US 2001-989077	20011121
US 6818770	B2	20041116		
JP 2002212195	A	20020731	JP 2001-357869	20011122
US 2005043279	A1	20050224	US 2004-911499	20040805
US 7217828	B2	20070515		
PRIORITY APPLN. INFO.:			DE 2000-10058383	20001124
			US 2001-989077	20011121

OTHER SOURCE(S): MARPAT 136:401882
AB The preparation of title compds. I (n = 0-1; Y = O, NH, organoamino; R1-R9 = H, aliphatic or aromatic hydrocarbyl, F, Cl, Br, I, CF3, alkoxy, organocarbonyl, alkoxycarbonyl, alkali, alkaline earth metal, ammonium, phosphonium substituted alkoxycarbonyl, organothio, organosulfonyl, etc.; Q, W, X = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aliphatic-aromatic hydrocarbyl), useful as cocatalyst for [acacRh(COD)] catalyzed hydroformylation reaction, is described. Thus, cyclization of 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) with PCl3 in THF in presence of pyridine followed by alkoxylation with lithiated 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) and condensation with lithiated 10-chloro-9,10-dihydro-9-aza-10- phosphaphenanthrene gave 48% title compound II. II cocatalyzed and [acacRh(COD)] catalyzed hydroformylation of 1-octene to give nonanal is described.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 11 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 11
ACCESSION NUMBER: 136:340833 CASREACT Full-text
TITLE: Preparation of bisphosphites and their metal complexes as catalysts for hydroformylation reactions
INVENTOR(S): Roettger, Dirk; Hess, Dieter; **Wiese, Klaus-Diether**; Borgmann, Cornelia; Boerner, Armin; Selent, Detlef; Schmutzler, Reinhard; Kunze, Christine

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1201675	A1	20020502	EP 2001-122420	20010920
EP 1201675	B1	20040121		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10053272	A1	20020508	DE 2000-10053272	20001027
AT 258183	T	20040215	AT 2001-122420	20010920
ES 2211710	T3	20040716	ES 2001-1122420	20010920
JP 2002193987	A	20020710	JP 2001-329624	20011026
US 2002111487	A1	20020815	US 2001-984263	20011029
US 6570033	B2	20030527		
PRIORITY APPLN. INFO.:			DE 2000-10053272	20001027

OTHER SOURCE(S): MARPAT 136:340833

AB The preparation of bisphosphites, I (R1-R4 = H, C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aromatic, etc. hydrocarbyl group; F, Cl, Br, I, CF3, alkoxy, etc.; Q = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, etc. bivalent hydrocarbyl; W, X = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, hydrocarbyl group), useful as cocatalyst for transition metal catalyzed hydroformylation reaction is described. Thus, phosphination of 2,2'-bis(6-tert-butyl-1-hydroxy-4-methoxyphenyl) with PCl3 in presence of pyridine followed by reaction with lithiation and phosphination with 2-chloro-1,3-dioxa-2- phosphaanthracen-4-one gave title compound II. [AcacRh(COD)] catalyzed hydroformylation of 1-octene in presence of cocatalyst II gave 79% nonanal.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 12 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 12
ACCESSION NUMBER: 134:366600 CASREACT Full-text
TITLE: Continuous hydroformylation of C2-25 olefins by multiphase reaction using tube reactors.
INVENTOR(S): Protzmann, Guido; **Wiese, Klaus-Diether**; Bueschken, Wilfried; Roettger, Dirk
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 26 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19957528	A1	20010531	DE 1999-19957528	19991130
EP 1106594	A2	20010613	EP 2000-122423	20001013
EP 1106594	A3	20020508		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
SG 97975	A1	20030820	SG 2000-6623	20001115
MX 2000PA11539	A	20020314	MX 2000-PA11539	20001123
JP 2001163820	A	20010619	JP 2000-360099	20001127
CA 2327022	A1	20010530	CA 2000-2327022	20001128
ZA 2000007014	A	20010605	ZA 2000-7014	20001129
CN 1297876	A	20010606	CN 2000-134292	20001129
TW 226883	B	20050121	TW 2000-89125322	20001129
US 2001003785	A1	20010614	US 2000-725518	20001130

US 6555716	B2	20030429		
BR 2000005637	A	20010717	BR 2000-5637	20001130
RO 121026	B1	20061130	RO 2000-1177	20001130
PL 193120	B1	20070131	PL 2000-344211	20001130
PRIORITY APPLN. INFO.:			DE 1999-19957528	19991130

AB Hydroformylation of C2-25 olefins is carried out by multiphase reaction in a tube reactor, whereby: (1) the catalysts (especially water-soluble Rh compds.) is present in the continuous phase, (2) the continuous phase contains a mixture of H2O and a water-soluble organic solvent containing ≥2 O atoms and the solvent mixture has a dielec. constant of 50-78, (3) ≥1 olefin is present in the disperse phase, and (4) the load factor of the tube reactor is >0.8. Mass ratio of the continuous phase to the disperse phase is >2, and the continuous phase is moved by a jet nozzle placed before the reactor. Aldehydes prepared by the described hydroformylation are especially useful for the preparation of alcs., carboxylic acids, or for aldol condensation. The title hydroformylation process compared to the conventional methods gives high yields at low temperature, reduces byproduct formation (<2%) and catalyst deactivation; unreacted starting materials can be recycled to the reactor. The hydroformylation was demonstrated by the preparation of CH3(CH2)2CHO from CH3CH:CH using cat. Rh acetate with TPPTS-ligands in H2O/(CH2OH)2 in comparison to the batch process and at various reaction conditions.

L90 ANSWER 13 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 13
ACCESSION NUMBER: 135:5378 CASREACT Full-text
TITLE: Catalytic aldol condensation of C1-15 aldehydes by multiphase reaction
INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann, Guido; Koch, Juergen; Bueschken, Wilfried
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 20 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19957522	A1	20010531	DE 1999-19957522	19991130
EP 1106596	A2	20010613	EP 2000-122424	20001013
EP 1106596	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6340778	B1	20020122	US 2000-694350	20001024
SG 86452	A1	20020219	SG 2000-6842	20001116
MX 2000PA11542	A	20020314	MX 2000-PA11542	20001123
JP 2001163823	A	20010619	JP 2000-359863	20001127
CA 2327047	A1	20010530	CA 2000-2327047	20001128
CN 1297877	A	20010606	CN 2000-134293	20001129
ZA 2000007013	A	20010607	ZA 2000-7013	20001129
TW 548264	B	20030821	TW 2000-89125323	20001129
BR 2000005672	A	20011127	BR 2000-5672	20001130
PL 192943	B1	20061229	PL 2000-344210	20001130
PRIORITY APPLN. INFO.:			DE 1999-19957522	19991130

AB Catalytic aldol condensation of C1-15 aldehydes is carried out by multiphase reaction in a tube reactor whereby: (1) the catalyst (H2O-soluble base) is present in the continuous phase at 0.1-15 weight%, (2) the disperse phase contains ≥1 aldehyde, and (3) the load factor of the reactor is ≥0.8. The continuous phase consists of H2O and a H2O-soluble organic solvent, and the mass ratio of the continuous phase to the disperse phase is >2. Thus, aldol condensation of n-pentanal at 110° using cat. NaOH in diethylene glycol (DEG) at a flow of 400 kg/h gives 95.4 weight% 2-propylheptenal. α,β-Unsatd. aldehydes prepared by described aldol condensation are especially useful after hydrogenation for preparation of alcs. for manufacture of softeners, detergents, or solvents; or after hydrogenation and oxidation for preparation of carboxylic acids.

Compared to conventional methods, the present process gives high yields at low temperature and reduces byproduct formation and catalyst deactivation.

L90 ANSWER 14 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 14
ACCESSION NUMBER: 136:199931 CASREACT Full-text
TITLE: Synthesis of pyrrolyl-, indolyl-, and carbazolylphosphanes and their catalytic application as ligands in the hydroformylation of 2-pentene
AUTHOR(S): Jackstell, Ralf; Klein, Holger; Beller, Matthias; **Wiese, Klaus-Diether**; Rottger, Dirk
CORPORATE SOURCE: Institut fur Organische Katalyseforschung (IfOK) an der Universitat Rostock e.V., Rostock, 18055, Germany
SOURCE: European Journal of Organic Chemistry (**2001**), (20), 3871-3877
CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The synthesis of π-acceptor ligands of the type PArxR3-x (x = 0-2; R = pyrrolyl, indolyl, carbazolyl; Ar = aryl) and P(pyrrolyl)2(carbazolyl) is described. Ligands included 1,1',1''-phosphinidynetris[1H-pyrrole], 1,1',1''- phosphinidynetris[1H-indole], 1,1',1''-phosphinidynetris[9H- carbazole] and derivs. thereof. These ligands can be prepared in good to excellent yields by treatment of the corresponding free heterocyclic amines with **phosphorus** chlorides in the presence of base. The utilization of pyrrolyl-, indolyl-, and carbazolylphosphanes in the rhodium-catalyzed hydroformylation of 2-pentene demonstrates the influence of the ligand π-acidity on regioselectivity and activity in the hydroformylation of internal olefins. In general, increasing π-acidity of the ligand results in an increased yield of the linear oxo product. The best n/iso ratios of about 60:40 are obtained at low synthesis gas pressure (10 bar) in the presence of the P(pyrrolyl)3 ligand.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 15 OF 34 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 15
ACCESSION NUMBER: 135:152873 CASREACT Full-text
TITLE: New **phosphorus** ligands for the rhodium-catalyzed isomerization/hydroformylation of internal octenes
AUTHOR(S): Selent, Detlef; Hess, Dieter; **Wiese, Klaus-Diether**; Rottger, Dirk; Kunze, Christine; Borner, Armin
CORPORATE SOURCE: Institut fur Organische Katalyseforschung an der Universitat Rostock e. V., Rostock, 18055, Germany
SOURCE: Angewandte Chemie, International Edition (**2001**), 40(9), 1696-1698
CODEN: ACIEF5; ISSN: 1433-7851
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The results that emphasize the astounding potential of π-acid bidentate ligands, e.g. I, of unsym. structure have in the hydroformylation of isomers of n-octenes is described. The preparation of seven such ligands is also described. Thus, [Rh(acac)(cod)]-catalyzed hydroformylation of n-octene in the presence of ligand I gave 94% n-nonanal.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

L90 ANSWER 16 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:251872 HCAPLUS Full-text
DOCUMENT NUMBER: 146:317783
TITLE: Carbonylation in the presence of sterically hindered secondary amines
INVENTOR(S): Hess, Dieter; **Ortmann, Dagmara**; **Moeller, Oliver**; **Wiese, Klaus-Diether**; **Fridag, Dirk**; Bueschken, Wilfried
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 32pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005042464	A1	20070308	DE 2005-102005042464 <--	20050907
WO 2007028660	A1	20070315	WO 2006-EP62872 <--	20060602

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: DE 2005-102005042464A 20050907

OTHER SOURCE(S): MARPAT 146:317783

AB In the title process, giving products useful, i.a., as stabilizers for PVC and curing accelerators for coatings, compds. are carbonylated in the presence of Group VIIIB metal complexes with organic P compds. and sterically-hindered secondary amines of specified structure. The ligand (I) was prepared by the oxidative coupling of 2,4-di-tert-butylphenol to give 4,4',6,6'-tetra-tert- butyl-2,2'-diphenol, reaction with PCl3 to give a cyclic chlorophosphite, and reaction with 2-hydroxy-2-naphthoic acid to give I. Hydroformylation of 1-octene in the presence of Rh nonanoate and I is exemplified.

L90 ANSWER 17 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:191026 HCAPLUS Full-text
DOCUMENT NUMBER: 144:274694
TITLE: Telomerization of acyclic olefins
INVENTOR(S): Borgmann, Cornelia; Roettger, Dirk; **Ortmann, Dagmara**; Bukohl, Reiner; Houbrechts, Stephan; Nierlich, Franz
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 23 pp.
CODEN: GWXXBX

DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005036038	A1	20060302	DE 2005-102005036038	20050801
DE 102005036039	A1	20060302	DE 2005-102005036039	20050801
DE 102005036040	A1	20060302	DE 2005-102005036040	20050801
AU 2005279196	A1	20060309	AU 2005-279196	20050823
CA 2576819	A1	20060309	CA 2005-2576819	20050823
CA 2576828	A1	20060309	CA 2005-2576828	20050823
CA 2578193	A1	20060309	CA 2005-2578193	20050823
WO 2006024614	A1	20060309	WO 2005-EP54135	20050823

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

WO 2006024615	A1	20060309	WO 2005-EP54136	20050823

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
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SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
WO 2006024616 A1 20060309 WO 2005-EP54137
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EP 1781586 A1 20070509 EP 2005-776194
2005
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EP 1781588 A1 20070509 EP 2005-787140
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CN 101010275 A 20070801 CN 2005-80029241
2005
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CN 101014559 A 20070808 CN 2005-80028949
2005
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CN 101018754 A 20070815 CN 2005-80029043
2005
0823
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US 2007213574 A1 20070913 US 2007-574060
2007
0222
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KR 2007045301 A 20070502 KR 2007-704735
2007
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KR 2007045303 A 20070502 KR 2007-704800
2007
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NO 2007001629 A 20070328 NO 2007-1629
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PRIORITY APPLN. INFO.: DE 2004-102004041778IA
2004
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DE 2005-102005036038A
2005
0801

DE 2005-102005036039A
2005
0801

DE 2005-102005036040A
2005
0801

WO 2005-EP54135 W
2005
0823

WO 2005-EP54136 W
2005
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WO 2005-EP54137 W
2005
0823

OTHER SOURCE(S): MARPAT 144:274694

AB In the title process, which overcomes some or all of the drawbacks of known processes, acyclic olefins containing ≥2 conjugated double bonds are telomerized in the presence of nucleophiles, Group 8-10 metal catalysts, and H. Adding 536 g C4 hydrocarbons to an autoclave containing 55.9 mg Pd acetylacetonate, 0.390 mg 1,3-bis(2,4,6-trimethylphenyl)imidazolium -o-cresolate-o-cresol, 166 g MeOH, 6.72 g o-cresol, 3.47 g NaOMe, and 100 g tripropylene glycol at 80° for 14 h gave an alkyne-free C4 hydrocarbon mixture containing 1,3-butadiene 42.61, isobutane 1.77, n-butane 7.05, trans-2-butene 5.14, 1-butene 15.05, isobutene 24.800, and cis-2-butene 3.58%.

L90 ANSWER 18 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1042198 HCAPLUS Full-text
DOCUMENT NUMBER: 143:346799
TITLE: Method for hydroformylating olefins in the presence of heteroacyl phosphites.
INVENTOR(S): Borgmann, Cornelia; Selent, Detlef; Boerner, Armin; **Wiese, Klaus-Diether; Ortmann, Dagmara; Moeller, Oliver**; Hess, Dieter
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005090276	A1	20050929	WO 2005-EP50347	2005 0127

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DE 102004013514	A1	20051006	DE 2004-102004013514 <--	20040319
EP 1732872	A1	20061220	EP 2005-707865 <--	20050127
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 1972889	A	20070530	CN 2005-80015879 <--	20050127
MX 2006PA10565	A	20061219	MX 2006-PA10565 <--	20060914
KR 2007007830	A	20070116	KR 2006-721657 <--	20061018
PRIORITY APPLN. INFO.:			DE 2004-102004013514A	20040319
			WO 2005-EP50347 W	20050127

OTHER SOURCE(S): MARPAT 143:346799

AB A process for hydroformylating C2-25 olefins and mixts. thereof comprises using CO and H2 in the presence of heteroacyl phosphites [I; R1-R4, Q = H, F, Cl, Br, iodo, CF3, (substituted) aliphatyl, alicyclyl, aryl, heeteroaryl, etc.; X, Y, Z = O, imino, S; with a proviso] and Group 4-10 metal complexes thereof. Thus, hydroformylation of 1-octene in PhMe with syngas in the presence of phosphite (II) (preparation given) and [acacRh(COD)] at 100° and 50 bar for 3 h gave 70% product with 97.3% n-selectivity.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 19 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:962183 HCAPLUS Full-text
DOCUMENT NUMBER: 143:249082
TITLE: Method for the production of olefins comprising 8 to 12 carbon atoms
INVENTOR(S): **Wiese, Klaus-Diether**; Kaizik, Alfred; Maschmeyer, Dietrich; Bueschken, Wilfried; Schueller, Ulf
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005080302	A1	20050901	WO 2004-EP53693	2004 1223
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 102004033410	A1	20050901	DE 2004-102004033410	2004 0708
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EP 1713749	A1	20061025	EP 2004-805021	2004 1223
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1914138	A	20070214	CN 2004-80041651	2004 1223
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US 2007135665	A1	20070614	US 2007-588762	2007 0110
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PRIORITY APPLN. INFO.:			DE 2004-102004007289A	2004 0214
			DE 2004-102004033410A	2004 0708
			WO 2004-EP53693 W	2004 1223

AB The production of olefins or olefin mixts. comprising 8 to 12 carbon atoms is achieved by means of a four-stage synthesis from one or several olefins containing 4 to 6 carbon atoms. The four-stage synthesis encompasses the steps of hydroformylation to obtain aldehydes, hydrogenation to obtain alcs., dehydration to obtain 1-olefins, and metathesis. The obtained C8 to C12 olefins can be used for the production of plasticizer alcs., for example, particularly isononanol. A process flow diagram is presented.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 20 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:612314 HCAPLUS Full-text
DOCUMENT NUMBER: 143:97529

TITLE: Improved process for preparation of organoacylphosphites by condensation of hydroxycarboxylic acids with **phosphorous** halides in the presence of basic ion-exchange resins.

INVENTOR(S): **Ortmann, Dagmara; Wiese, Klaus-Diether; Moeller, Oliver; Fridag, Dirk**

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063781	A1	20050714	WO 2004-EP52675	2004 1027
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10360772	A1	20050728	DE 2003-10360772	2003 1223
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EP 1697390	A1	20060906	EP 2004-820837	2004 1027
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1898256	A	20070117	CN 2004-80038836	2004 1027
			<--	
MX 2006PA05977	A	20060706	MX 2006-PA5977	2006 0525
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US 2007117995	A1	20070524	US 2006-584492	2006 1208
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PRIORITY APPLN. INFO.:			DE 2003-10360772 A	2003 1223
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			WO 2004-EP52675 W	2004 1027

OTHER SOURCE(S): MARPAT 143:97529

AB Acylphosphites, preferably 2-L-5-R4-6-R3-7-R2-8-R1-benzo[e][1,3,2]-

dioxaphosphorin-4-ones (L = halide or C- or O-bound organyl; R1-R4 = (un)substituted alkyl or (hetero)aryl C1-50 groups, eventually containing ether, ketone, ester sulfide, sulfonyl, sulfoxide, sulfonamide, amino and imino functions, or eventually forming benzannelated ring systems) useful as softeners, fire protectors, UV-stabilizers, antioxidants, intermediates for preparation of pesticides or pharmaceuticals (no data), were prepared by continuous or discontinuous process comprising the reaction of hydroxycarboxylic acids, preferably of 3-R1-4-R2-5-R3-6-R4- salicylic acids with **phosphorous** halide derivs. PXnR3-n (R = L, n = 2, 3) in inert solvents in the presence of weak basic ion exchange resins, preferably dialkylamino-containing styrene-divinylbenzene copolymers (e.g., Lewatit MP-62, DOWEX M-43 and Amberlyst A21), preferably at 20-100°, preferably in the presence of homogeneous weak base (e.g. N-methylpyrrolidone, methylimidazole) in base:resin molar ratio of 0.001 to 0.01. Mixed acylphosphites containing trialkyl phosphite, phosphonite or phosphinite structural fragments, 2-X1O-5-R1-6-R2-7-R3-8-R4- benzo[e][1,3,2]-**dioxaphosphorin**-4-ones (same R1-R4, X1 = R5R6POQO, where Q = at least divalent organic radical) were prepared by mono-esterification of **phosphorous** halides with glycols followed by reaction with corresponding 2-chloro-1,3,2- **dioxaphosphorin**-4-ones. In an example, 2-chloro-4H-naphtho[1,2-d]-1,3,2-**dioxaphosphorin**-4-on was prepared by reaction of 0.05 mol of 1-hydroxy-2- naphthalenecarboxylic acid with 58 g of ion exchanger Lewatit MP-62 and 0.005 mol of PCl3 in 250 mL of toluene at room temperature in 75% yield. The inventive method makes it possible to easily produce trivalent **organophosphorus** compds. such as ligands in rhodium complexes that can be used as catalysts during hydroformylation.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 21 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:612310 HCAPLUS Full-text
DOCUMENT NUMBER: 143:97527
TITLE: Improved process for preparation of organic phosphites, phosphonites and phosphinites by condensation of **phosphorous** halides with organic hydroxy compounds in the presence of basic ion exchange resins
INVENTOR(S): **Ortmann, Dagmara; Wiese, Klaus-Diether; Moeller, Oliver; Fridag, Dirk**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063776	A1	20050714	WO 2004-EP52729	2004 1029

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DE 10360771	A1	20050728	DE 2003-10360771	2003 1223

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EP 1697387	A1	20060906	EP 2004-820839	2004 1029
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CN 1898253	A	20070117	CN 2004-80038825	2004 1029
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MX 2006PA07258	A	20060818	MX 2006-PA7258	2006 0622
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US 2007112219	A1	20070517	US 2006-584148	2006 0622
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PRIORITY APPLN. INFO.:			DE 2003-10360771 A	2003 1223
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			WO 2004-EP52729 W	2004 1029

OTHER SOURCE(S): MARPAT 143:97527

AB The **phosphorus**(III) esters PXR(OR1) (X = Cl, Br, I or OR2; R = OR3 or R, R1, R2 R3 = same or different (un)substituted C1-50 (cyclo)alkyl or aryl, optionally bound together, optionally containing amino, nitrile, ketone, aldehyde, ester, ether, silyl, amide or carbonate functions), diesters XRPOQOPXR (same X, R; Q = C1-50 (un)substituted (cyclo)alkane- or arenediyl), useful as softeners, fire protectors, UV-stabilizers and antioxidants, as well as intermediates for production of pesticides and pharmaceuticals (no data), were prepared by condensation of PXnR3-n (X = Cl, Br, I; same R; n = 1-3) with organic hydroxy compds. R1OH (same R1) or diols or biphenols HOQOH in the presence of weakly basic ion exchange resins, preferably styrene-divinylbenzene compolymers, containing dimethylamino groups (e.g., Lewatit MP-62, DOWEX M-43 or Amberlyst A21) at preferable temps. 20-100° in inert solvents with optional homogeneous basic additives, according to continuous or discontinuous protocols. In an example, 3,3'-di-tert-butyl-5,5'- dimethoxy-1,1'-biphenyl-2,2'-diyl 3,3'-di-tert-butyl-2'-hydroxy- 5,5'-dimethoxy-1,1'-biphenyl-2-yl phosphite (1, 11.8 g, 93% yield) was prepared by reaction of 0.015 mol of PCl3 with 0.03 mol of 3,3'-di-tert-butyl-5,5'-dimethoxy-2,2'-biphenol in 100 mol of toluene in the presence of 26.5 g of Lewatit MP-62 at 60° for 2 h. In a comparison example, 1 was prepared in the presence of pyridine without basic resin, implying reaction with lithium phenolate and removal of the residual pyridine, as highly-viscous product in 93% yield. The inventive method permits the production of trivalent **organophosphorus** compds., which can be used e.g. as ligands in rhodium complexes that can be utilized as a catalyst in hydroformylation.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 22 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:567143 HCAPLUS Full-text

DOCUMENT NUMBER: 143:84366

TITLE: Catalyst and method for the production of 1-olefins from 2-hydroxyalkanes

INVENTOR(S): Kaizik, Alfred; Maschmeyer, Dietrich; **Wiese, Klaus-Diether**; Bueschken, Wilfried; Gaudschun, Kurt-Alfred

PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**

SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005058485	A1	20050630	WO 2004-EP52607	2004 1021
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RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10359628	A1	20050721	DE 2003-10359628	2003 1218
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EP 1694433	A1	20060830	EP 2004-791274	2004 1021
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CN 1894031	A	20070110	CN 2004-80037285	2004 1021
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US 2007043245	A1	20070222	US 2006-576302	2006 0419
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PRIORITY APPLN. INFO.:			DE 2003-10359628 A	2003 1218
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			WO 2004-EP52607 W	2004 1021

AB The invention relates to a method for the production of 1-olefins from 2-hydroxyalkanes by means of catalytic dehydration in non-isomerizing conditions. The said catalyst comprises yttrium oxide (Y2O3), zirconium dioxide (ZrO2) and an alkali oxide and/or alkaline-earth oxide. For example, 2-octanol was catalytically dehydrolyzed in the presence of Na2O-modified ZrO2/Y2O3 catalyst at 350° to yield a mixture containing 71% 1-octene and other isomers such as 2-, 3-, and 4-octenes, 2-octanone.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 23 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:177976 HCAPLUS Full-text
DOCUMENT NUMBER: 140:237523
TITLE: Procedure for the production of aldehydes by hydroformylation of olefins with synthesis gas catalyzed by unmodified metal complexes of Group VIIIB metals in the presence of alkylene carbonates
INVENTOR(S): **Moeller, Oliver**; Hess, Dieter; **Wiese, Klaus-Diether**; Borgmann,

Cornelia
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 16 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10327435	A1	20040304	DE 2003-10327435	2003 0618
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CA 2506258	A1	20040325	CA 2003-2506258	2003 0807
			<--	
WO 2004024661	A1	20040325	WO 2003-EP8737	2003 0807
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003250219	A1	20040430	AU 2003-250219	2003 0807
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EP 1532095	A1	20050525	EP 2003-794848	2003 0807
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003013814	A	20050705	BR 2003-13814	2003 0807
			<--	
CN 1678558	A	20051005	CN 2003-820534	2003 0807
			<--	
JP 2005537330	T	20051208	JP 2004-535060	2003 0807
			<--	
US 2005209489	A1	20050922	US 2004-519557	2004 1228
			<--	
US 7193116	B2	20070320		
IN 2004CN03063	A	20060217	IN 2004-CN3063	2004 1231

			<--	
MX 2005PA01396	A	20050428	MX 2005-PA1396	2005 0203
			<--	
ZA 2005001710	A	20050906	ZA 2005-1710	2005 0228
			<--	
IN 2005CN00280	A	20070907	IN 2005-CN280	2005 0228
			<--	
PRIORITY APPLN. INFO.:			DE 2002-10240253	IA 2002 0831
			<--	
			DE 2003-10327435	A 2003 0618
			<--	
			WO 2003-EP8736	W 2003 0807
			<--	
			WO 2003-EP8737	W 2003 0807
			<--	

OTHER SOURCE(S): MARPAT 140:237523

AB Aldehydes (e.g., C13 aldehydes) are prepared in high yield and selectivity by the hydroformylation of olefins (e.g., n-butene trimer) with synthesis gas (e.g., H2-CO mixts.) catalyzed by unmodified metal complexes of Group VIIIB metals [e.g., HRh(CO)3] in the presence of alkylene carbonates (e.g., propylene carbonate). Process flow diagrams are presented.

L90 ANSWER 24 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:279561 HCAPLUS Full-text
DOCUMENT NUMBER: 138:304680
TITLE: Manufacture of 1-olefins with palladium carbene compounds
INVENTOR(S): Beller, Matthias; Jackstell, Ralf; Klein, Holger; Roettger, Dirk; **Wiese, Klaus-Diether**; Maschmeyer, Dietrich; Tuchlenski, Axel; Kaizik, Alfred; Santiago Fernandez, Silvia
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 16 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10149348	A1	20030410	DE 2001-10149348	2001 1006
			<--	
CA 2462832	A1	20030417	CA 2002-2462832	2002 1001
			<--	
WO 2003031379	A1	20030417	WO 2002-EP10971	

2002
1001
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG

AU 2002340959 A1 20030422 AU 2002-340959
2002
1001
<--

AU 2002340959 B2 20070802

EP 1432666 A1 20040630 EP 2002-774675
2002
1001
<--

EP 1432666 B1 20050803
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,
EE, SK

BR 2002013104 A 20040921 BR 2002-13104
2002
1001
<--

HU 2004001669 A2 20041129 HU 2004-1669
2002
1001
<--

CN 1564795 A 20050112 CN 2002-819786
2002
1001
<--

JP 2005504838 T 20050217 JP 2003-534367
2002
1001
<--

AT 301110 T 20050815 AT 2002-774675
2002
1001
<--

ES 2244808 T3 20051216 ES 2002-2774675
2002
1001
<--

TW 251586 B 20060321 TW 2002-91122819
2002
1003
<--

US 2004242947 A1 20041202 US 2004-490038
2004
0319
<--

MX 2004PA03106 A 20040727 MX 2004-PA3106
2004
0401
<--

NO 2004001866 A 20040506 NO 2004-1866
2004
0506

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PRIORITY APPLN. INFO.: DE 2001-10149348 A
2001
1006
<--
WO 2002-EP10971 W
2002
1001
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OTHER SOURCE(S): MARPAT 138:304680

AB C8-18 1-Olefins, useful as monomers, are manufactured by telomerization of compds. containing conjugated double bonds with a nucleophilic reagent as telogen in the presence of Pd carbene complex as telomerization catalyst, followed by hydrogenation of the telomer and bond cleavage of the hydrogenated intermediates. The Pd carbene complex catalysts are formed from Pd compds. and ligands comprising N-C-N structures, e.g., imidazolines or imidazolidines. For example, telomerization of 1,3-butadiene with MeOH, in the presence of a catalyst formed in situ from Pd acetylacetonate and 1,3-bis(2,4,6-trimethylphenyl)imidazolium chloride gave 1-methoxy-2,7-octadiene. Hydrogenation of the latter gave Me octyl ether which was subjected with bond cleavage in the presence of alkali-modified Al2O3 (1% Na2O) to give 1-octene.

L90 ANSWER 25 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:610343 HCAPLUS Full-text
DOCUMENT NUMBER: 137:155283
TITLE: Three-step preparation of C7-24 α-olefins from C4-21 aldehydes and acetone
INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann, Guido; Kaizik, Alfred; Bueschken, Wilfried
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1231194	A1	20020814	EP 2002-931	2002 0116
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EP 1231194	B1	20031112		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
DE 10147775	A1	20020814	DE 2001-10147775	2001 0927
			<--	
US 2002169347	A1	20021114	US 2002-67924	2002 0208
			<--	
US 6627782	B2	20030930		

PRIORITY APPLN. INFO.: DE 2001-10106185 A
2001
0210
<--
DE 2001-10147775 A
2001
0927
<--

AB A three-step preparation of C7-24 α-olefins, which are claimed useful as comonomers, from C4-21 aldehydes and acetone comprises: (1) the aldol condensation of acetone with a C4-21 aldehyde (e.g., n-pentanal) to give an α,β-unsatd. ketone (e.g., 3-octen-2-one); (2) hydrogenation of the α,β-unsatd. ketone into a saturated alc. (e.g., 2-octanol); and (3) dehydration of the saturated alc. into an α-olefin (e.g., 1-octene). A process flow diagram is presented.

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 26 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:253009 HCAPLUS Full-text
DOCUMENT NUMBER: 136:281147
TITLE: Stabilization of rhodium catalysts for the hydroformylation of olefins
INVENTOR(S): **Wiese, Klaus-Diether**; Trocha, Martin; Roettger, Dirk; Toetsch, Walter; Kaizik, Alfred; Bueschken, Wilfried
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1193239	A1	20020403	EP 2001-119282	2001 0810
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EP 1193239	B1	20041208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10048301	A1	20020411	DE 2000-10048301	2000 0929
			<--	
AT 284375	T	20041215	AT 2001-119282	2001 0810
			<--	
ES 2231358	T3	20050516	ES 2001-1119282	2001 0810
			<--	
SG 94863	A1	20030318	SG 2001-5593	2001 0912
			<--	
US 2002065437	A1	20020530	US 2001-960936	2001 0925
			<--	
US 6500991	B2	20021231		
TW 224094	B	20041121	TW 2001-90123565	2001 0925
			<--	
CA 2357856	A1	20020329	CA 2001-2357856	2001 0927
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MX 2001PA09756	A	20020415	MX 2001-PA9756	

				2001 0927
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BR 2001004335	A	20020507	BR 2001-4335	
				2001 0927
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CN 1346821	A	20020501	CN 2001-141119	
				2001 0928
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ZA 2001007977	A	20020529	ZA 2001-7977	
				2001 0928
			<--	
JP 2002161063	A	20020604	JP 2001-300783	
				2001 0928
			<--	
RU 2270829	C2	20060227	RU 2001-126325	
				2001 0928
			<--	
PRIORITY APPLN. INFO.:			DE 2000-10048301 A	
				2000 0929
			<--	

AB Deactivation of the title catalysts in the production of C3-21 aldehydes is largely suppressed by separating the reactor effluent into a gas and a liquid phase, separating the liquid phase into an overhead fraction containing aldehydes and unreacted olefins and a sump fraction containing Rh catalyst, and treating the cooled sump fraction with a gas containing CO. Hydroformylation of di-n-butene (5 kg/h) with 1:1 CO-H (2 kg/h) over Rh octanoate/tris(2,4-di-tert- butylphenyl) phosphite (30-90 ppm Rh) at 130°/50 bar, removing the catalyst when the conversion fell to <95%, cooling the catalyst to 60°, and returning the catalyst to the reactor required the addition of 0.9 g Rh/ton reacted olefin to restore initial activity; vs. 2.1 g/ton when the catalyst was not cooled.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 27 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:941593 HCAPLUS Full-text
DOCUMENT NUMBER: 138:25097
TITLE: Procedure and catalysts for telomerization of noncyclic olefins
INVENTOR(S): Roettger, Dirk; Beller, Matthias; Jackstell, Ralf; Klein, Holger; **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10128144	A1	20021212	DE 2001-10128144	2001 0609
			<--	
CA 2449994	A1	20021219	CA 2002-2449994	2002 0504

<--
WO 2002100803 A2 20021219 WO 2002-EP4909
2002
0504
<--
WO 2002100803 A3 20040212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,
MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2002312879 A1 20021223 AU 2002-312879
2002
0504
<--
EP 1406852 A2 20040414 EP 2002-738032
2002
0504
<--
EP 1406852 B1 20041110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
BR 2002010253 A 20040622 BR 2002-10253
2002
0504
<--
CN 1541197 A 20041027 CN 2002-811612
2002
0504
<--
JP 2004534059 T 20041111 JP 2003-503574
2002
0504
<--
AT 282017 T 20041115 AT 2002-738032
2002
0504
<--
HU 2004000235 A2 20041228 HU 2004-235
2002
0504
<--
HU 2004000235 A3 20061128
ES 2230498 T3 20050501 ES 2002-2738032
2002
0504
<--
TW 591011 B 20040611 TW 2002-91112138
2002
0605
<--
EG 23330 A 20041229 EG 2002-608
2002
0605
<--
MX 2003PA11204 A 20040226 MX 2003-PA11204
2003
1204
<--
US 2005038273 A1 20050217 US 2003-478697
2003

1209
<--
US 7026523 B2 20060411
PRIORITY APPLN. INFO.: DE 2001-10128144 A
2001
0609
<--
WO 2002-EP4909 W
2002
0504
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OTHER SOURCE(S): MARPAT 138:25097
AB Noncyclic olefins with ≥2 conjugated double bonds or mixts. of such olefins, with nucleophiles are polymerized with Pd carbene complexes as catalysts. For example, telomerization of 2 mol butadiene with 1 mol MeOH at 90° in the presence of 1 mol.% of a base (NaOH or Et3N) and 0.01 mol.% Pd (as catalyst I) gave ≥98% telomer CH2:CH(CH2)3CH:CHCH2OMe.

L90 ANSWER 28 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:396480 HCAPLUS Full-text
DOCUMENT NUMBER: 135:7149
TITLE: Process for carrying out aldol condensations
INVENTOR(S): Protzmann, Guido; **Wiese, Klaus-Diether** ; Buschken, Wilfried
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1103538	A1	20010530	EP 2000-121938	2000 1009
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EP 1103538	B1	20030528		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19956410	A1	20010531	DE 1999-19956410	1999 1124
			<--	
TW 226884	B	20050121	TW 2000-89119310	2000 0920
			<--	
AT 241582	T	20030615	AT 2000-121938	2000 1009
			<--	
ES 2195828	T3	20031216	ES 2000-121938	2000 1009
			<--	
MX 2000PA11268	A	20020523	MX 2000-PA11268	2000 1116
			<--	
JP 2001151703	A	20010605	JP 2000-354679	2000 1121

			<--	
SG 90201	A1	20020723	SG 2000-6742	
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				1121
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PL 193274	B1	20070131	PL 2000-343990	
				2000
				1121
			<--	
CA 2326779	A1	20010524	CA 2000-2326779	
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				1122
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US 6433230	B1	20020813	US 2000-716941	
				2000
				1122
			<--	
ZA 2000006868	A	20010605	ZA 2000-6868	
				2000
				1123
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CN 1297879	A	20010606	CN 2000-128456	
				2000
				1123
			<--	
IN 2000MA00997	A	20050520	IN 2000-MA997	
				2000
				1123
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BR 2000005559	A	20010703	BR 2000-5559	
				2000
				1124
			<--	
PRIORITY APPLN. INFO.:			DE 1999-19956410	A
				1999
				1124
			<--	

AB α,β-Unsatd. keto compds. are manufactured by base-catalyzed aldol condensation of C1-15 aldehydes and/or ketones in the presence of aqueous catalyst solns., under adiabatic reaction conditions. The reaction products are subjected to a short distillation in order to sep. H2O, aldehydes and/or ketones as head products and α,β-unsatd. compds. and catalyst-containing aqueous phase as sump products. Thus, 2-propyl-2-heptenal was manufactured from pentanal in the presence of aqueous NaOH.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 29 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:437023 HCAPLUS Full-text
DOCUMENT NUMBER: 135:34562
TITLE: Status and future aspects of industrial hydroformylation
AUTHOR(S): Protzmann, Guido; **Wiese, Klaus-Diether**
CORPORATE SOURCE: OXENO Olefinchemie GmbH, Marl, Germany
SOURCE: Erdoel, Erdgas, Kohle (**2001**), 117(5), 235-240
CODEN: EEKOEY; ISSN: 0179-3187
PUBLISHER: Urban-Verlag
DOCUMENT TYPE: Journal; **General Review**
LANGUAGE: English

AB A review with 19 refs. Since the discovery of hydroformylation more than 60 yr ago, a vary large demand for aldehydes has developed. Today, aldehydes having chain lengths of 2-18 carbon atoms are produced. The reaction of propene to butanal plays the most important role here. Competition is very harsh in these markets because of overcapacities and alternative products. The most active catalyst systems are Rh complexes modified with **phosphorus**-containing ligands. Attempts are being made to

utilize these systems, which have become established for the production of butanal, for industrial processes for the reaction of longer-chain olefins. Industrial research is being increasingly concentrated, with fewer and fewer companies carrying out most of the work. The focus of industrial research is the development and handling of catalysts. There is interest in the development of two-phase reactions.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L90 ANSWER 30 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:865164 HCAPLUS Full-text
DOCUMENT NUMBER: 134:30876
TITLE: Tubular reactor for multiphase vinylation of carboxylic acids for preparation of carboxylic acid vinyl esters
INVENTOR(S): **Wiese, Klaus-Diether**; Olbrich, Paul
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1057525	A2	20001206	EP 2000-109784 <--	20000509
EP 1057525	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19925385	A1	20001207	DE 1999-19925385 <--	19990602
JP 2001019660	A	20010123	JP 2000-160521 <--	20000530
CA 2310512	A1	20001202	CA 2000-2310512 <--	20000531
SG 85706	A1	20020115	SG 2000-2944 <--	20000531
US 6500979	B1	20021231	US 2000-583776 <--	20000531
ZA 2000002739	A	20001211	ZA 2000-2739 <--	20000601
BR 2000002555	A	20010102	BR 2000-2555 <--	20000601
CN 1290684	A	20010411	CN 2000-131741 <--	20000601
MX 2000PA05432	A	20020604	MX 2000-PA5432	

				2000 0601 <--
TW 523423	B	20030311	TW 2000-89110686	2000 0601 <--
HK 1036051	A1	20050819	HK 2001-106774	2001 0925 <--
PRIORITY APPLN. INFO.:			DE 1999-19925385 A	1999 0602 <--

AB Multiphase vinylation of carboxylic acids (i.e., C2-16-carboxylic acids) by reaction with acetylene is carried out in a tubular reactor, in which the catalyst is in the continuous phase and at least one educt (of a reactant) is in the dispersed phase, and in which the load factor, B, of the tubular reactor is ≥0.8. The two phases are present at a >2:1 continuous phase to dispersed phase. The catalyst is typically the metal salt of a carboxylic acid, especially the zinc salt. The product vinyl esters can be used for the manufacture of homopolymers and copolymers (e.g., in the manufacture of adhesives).

L90 ANSWER 31 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:865163 HCAPLUS Full-text
DOCUMENT NUMBER: 134:30875
TITLE: Tubular reactor for multiphase hydroformylation of alkenes for production of aldehydes
INVENTOR(S): **Wiese, Klaus-Diether**; Protzmann, Guido; Koch, Jurgen; Rottger, Dirk; Trocha, Martin
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1057524	A2	20001206	EP 2000-108156	2000 0413 <--
EP 1057524	A3	20020417		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 19925384	A1	20001207	DE 1999-19925384	1999 0602 <--
MX 200001215	A	20020424	MX 2000-1215	2000 0203 <--
TW 537930	B	20030621	TW 2000-89107681	2000 0424 <--
JP 2001026566	A	20010130	JP 2000-160516	2000

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CA 2310516	A1	20001202	CA 2000-2310516	
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BR 2000002178	A	20010102	BR 2000-2178	
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SG 86401	A1	20020219	SG 2000-2945	
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ZA 2000002740	A	20001211	ZA 2000-2740	
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CN 1276364	A	20001213	CN 2000-108799	
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RO 121180	B1	20070130	RO 2000-568	
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US 6492564	B1	20021210	US 2000-585425	
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PRIORITY APPLN. INFO.:			DE 1999-19925384 A	
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				0602
			<--	

AB Multiphase hydroformylation of olefins (i.e., C2-25-olefins) is carried out in a tubular reactor, in which the catalyst is in the continuous phase and at least one educt (of a reactant) is in the dispersed phase, and in which the load factor, B, of the tubular reactor is ≥0.8. The continuous phase is composed of water or a mixture of water with an organic solvent; the two phases are present at a >2:1 continuous phase to dispersed phase. The catalyst is typically a complex of Group 8 elements, especially rhodium. The product aldehydes can be used for the manufacture of alcs., carboxylic acids, or aldol condensation products.

L90 ANSWER 32 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:592387 HCAPLUS Full-text
DOCUMENT NUMBER: 133:194951
TITLE: Process for fractionating dibutene and use of the resulting fractions
INVENTOR(S): **Wiese, Klaus-Diether**
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1029839	A1	20000823	EP 1999-126213	
				1999
				1230
			<--	

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,

MC, PT, IE, SI, LT, LV, FI, RO

DE 19906518	A1	20000831	DE 1999-19906518 <--	1999 0217
MX 200001451	A	20020308	MX 2000-1451 <--	2000 0210
SG 89317	A1	20020618	SG 2000-798 <--	2000 0214
TW 491827	B	20020621	TW 2000-89102415 <--	2000 0214
CA 2298871	A1	20000817	CA 2000-2298871 <--	2000 0215
JP 2000239196	A	20000905	JP 2000-38350 <--	2000 0216
ZA 2000000733	A	20000908	ZA 2000-733 <--	2000 0216
KR 2000058062	A	20000925	KR 2000-7261 <--	2000 0216
BR 2000000487	A	20000912	BR 2000-487 <--	2000 0217
CN 1266835	A	20000920	CN 2000-102371 <--	2000 0217
US 6433242	B1	20020813	US 2000-505673 <--	2000 0217
PRIORITY APPLN. INFO.:			DE 1999-19906518 A <--	1999 0217

AB Dibutene is separated, preferably by continuous distillation at atmospheric pressure, into a heavier fraction (containing the n-octenes) with iso index <90% that of the dibutene feed and a lighter fraction (containing the dimethylhexenes) with iso index >110% that of the dibutene feed, where the iso index is the average number of branches in the mols. in the mixture The dibutene used was formed by dimerization of 2-butene over a fixed bed of Ni catalyst (Octol process). The products can be converted into C9 acids by carboxylation and C9 alcs. (useful in plasticizer manufacture) via hydroformylation, and the dimethylhexene-containing fraction, after hydrogenation, can be used as a fuel component. Properties of the C9 alcs. and of polymers of the vinyl esters of the C9 acids from the 2 sep. C8 alkene fractions were compared with those of the analogous compound mixts. from the unsepd. dibutene mixture

L90 ANSWER 33 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:607377 HCAPLUS Full-text
DOCUMENT NUMBER: 133:208302
TITLE: Process for the manufacture of vinyl esters from butene oligomers

INVENTOR(S): **Wiese, Klaus-Diether**; Olbrich, Paul; Gabriel, Juergen
PATENT ASSIGNEE(S): **Oxeno Olefinchemie G.m.b.H., Germany**
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19908320	A1	20000831	DE 1999-19908320	1999 0226
			<--	
NO 2000000872	A	20000828	NO 2000-872	2000 0222
			<--	
EP 1033360	A1	20000906	EP 2000-103784	2000 0223
			<--	
EP 1033360	B1	20030917		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
ES 2204373	T3	20040501	ES 2000-103784	2000 0223
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MX 200001956	A	20020308	MX 2000-1956	2000 0224
			<--	
CA 2299587	A1	20000826	CA 2000-2299587	2000 0225
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JP 2000248017	A	20000912	JP 2000-49560	2000 0225
			<--	
KR 2000058191	A	20000925	KR 2000-9301	2000 0225
			<--	
CN 1269352	A	20001011	CN 2000-108619	2000 0225
			<--	
ZA 2000000927	A	20001016	ZA 2000-927	2000 0225
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SG 82685	A1	20010821	SG 2000-1047	2000 0225
			<--	
TW 482760	B	20020411	TW 2000-89103521	2000 0225
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BR 2000000963	A	20000919	BR 2000-963	2000 0228

			<--	
US 6281372	B1	20010828	US 2000-514355	2000 0228
			<--	
HK 1031866	A1	20050909	HK 2001-102486	2001 0409
			<--	
PRIORITY APPLN. INFO.:			DE 1999-19908320 A	1999 0226
			<--	

AB Butene is oligomerized, the butene oligomers are separated, converted to carboxylic acids with 1 addnl. C atom (e.g., by hydroformylation followed by oxidation), and the acids are converted to their vinyl esters (e.g., by reaction with acetylene). The butene oligomers are especially di-, tri- and tetrabutene. The vinyl esters are used as plasticizers or as comonomers in polymerization reactions.

L90 ANSWER 34 OF 34 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1970:110301 HCAPLUS Full-text
DOCUMENT NUMBER: 72:110301
ORIGINAL REFERENCE NO.: 72:19909a,19912a
TITLE: Plant nutrient availability in soils. II. Quantity-intensity relations of **phosphorus** and manganese as influenced by soil pH
AUTHOR(S): Lamm, Carl G.; Tjell, J. Chr.; **Moeller**, **O.**; Christiansen, T. F.
CORPORATE SOURCE: Chem. Lab. A, Tech. Univ. Denmark, Lyngby, Den.
SOURCE: Acta Agriculturae Scandinavica (**1969**), 19(2-3), 135-40
CODEN: AASCAU; ISSN: 0001-5121
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The Q-I relations were tested with regard to P and Mn on soils sampled from a field lime experiment at the Virumgaard Experiment Station. The values of the differential capacity parameters obtained at various soil pH values are explained by assuming the ion exchanging sites of the soil colloids to behave as weak acids or bases. Thus, by increasing pH, the cation exchange properties increase, but the anion exchange properties decrease. The latter decrease may, however, be counteracted by polyvalent cations being electrostatically bound to cation exchanging sites or coordinatively bound to ligands, such as neutral amino groups. The various availability parameters are discussed.

STRUCTURE SEARCH RESULTS

```
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L89            4 S L42 NOT L88

=> d que stat l89
L9                STR
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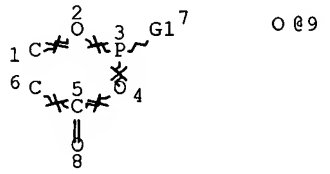


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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   9

STEREO ATTRIBUTES: NONE
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L21              QUE  ABB=ON  PLU=ON  PY<20043 OR PRY<2004 OR AY<2004 OR
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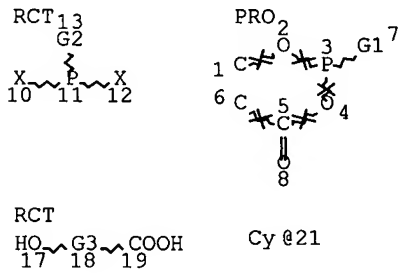


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VAR G3=20/21
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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L42             4 SEA FILE=CASREACT ABB=ON  PLU=ON  L41 AND L21
L54            70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "OXENO OLEFINCHEMIE G
                  M B H GERMANY"/PA,CS,SO,CO
L56               QUE  ABB=ON  PLU=ON  FRIDAG D?/AU
L57               QUE  ABB=ON  PLU=ON  MOELLER O?/AU
L58               QUE  ABB=ON  PLU=ON  MOLLER O?/AU
L59               QUE  ABB=ON  PLU=ON  ORTMANN D?/AU
L60               QUE  ABB=ON  PLU=ON  ("WIESE K"/AU OR "WIESE K D"/AU OR
                   "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE
                  KLAUS DIETHER"/AU)
L82            21 SEA FILE=CASREACT ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU
                  OR "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR
                  "WIESE, KLAUS-DIETHER"/AU)
L83            30 SEA FILE=CASREACT ABB=ON  PLU=ON  (L56 OR L57 OR L58
                  OR L59 OR L60)
L84            30 SEA FILE=CASREACT ABB=ON  PLU=ON  L82 OR L83
L85             8 SEA FILE=CASREACT ABB=ON  PLU=ON  L84 AND L54
L86            10 SEA FILE=CASREACT ABB=ON  PLU=ON  L84 AND ?PHOSPHOR?
L87            15 SEA FILE=CASREACT ABB=ON  PLU=ON  (L85 OR L86)
L88            15 SEA FILE=CASREACT ABB=ON  PLU=ON  L87 AND L21
L89             4 SEA FILE=CASREACT ABB=ON  PLU=ON  L42 NOT L88


=> d his l81

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=> d que stat l81
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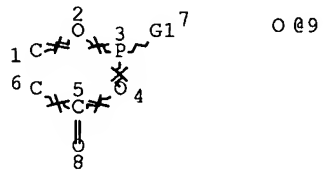


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STEREO ATTRIBUTES: NONE
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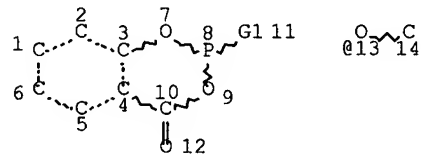

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DEFAULT ECLEVEL IS LIMITED

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STEREO ATTRIBUTES: NONE
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L17          284 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14
L18           99 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14/P
L19            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L14 /DP
L20           99 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18 OR L19
L21              QUE  ABB=ON  PLU=ON  PY<20043 OR PRY<2004 OR AY<2004 OR
                  MY<2004 OR REVIEW/DT
L23           99 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND L21
L24              QUE  ABB=ON  PLU=ON  PRODUC? OR PROD# OR GENERAT? OR MA
                 NUF? OR MFR# OR CREAT? OR FORM## OR FORMING# OR FORMAT?
                  OR MAKE# OR MADE# OR MAKIN# OR FABRICAT? OR SYNTHESI?
                 OR PREPAR? OR PREP#
L25          272 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L17 AND L24
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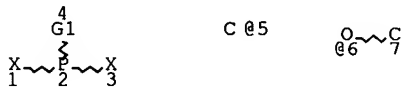


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NODE ATTRIBUTES:
NSPEC   IS RC     AT   5
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DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
L44        11759 SEA FILE=REGISTRY SSS FUL L28
L45        14505 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44
L46           25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 AND L17
L47         8585 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L44/RCT
L48            7 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L47 AND L20
L50           24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L45
L51           25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L46 OR L48 OR L50
L52           25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L51 AND L21
L53           55 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU OR
                 "MOELLER, OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR
                 "WIESE, KLAUS-DIETHER"/AU)
L54           70 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "OXENO OLEFINCHEMIE G
                 M B H GERMANY"/PA,CS,SO,CO
L55           25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L53 AND L54
L56              QUE  ABB=ON  PLU=ON  FRIDAG D?/AU
L57              QUE  ABB=ON  PLU=ON  MOELLER O?/AU
L58              QUE  ABB=ON  PLU=ON  MOLLER O?/AU
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L60              QUE  ABB=ON  PLU=ON  ("WIESE K"/AU OR "WIESE K D"/AU OR
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L64            16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 AND ?PHOSPHOR?
L65            34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 OR L63 OR L64
L66            34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 AND L21
L67            25 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L52 NOT L66
L71               QUE  ABB=ON  PLU=ON  29/SC,SX
L72               QUE  ABB=ON  PLU=ON  45/SC,SX
L73             2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23 AND L72
L74             3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L72
L75            87 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L71
L76            49 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L23 AND L71
L77             2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L73 OR L74) AND (L75
                OR L76)
L78             3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L73 OR L74) OR L77
L79             3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 AND L21
L80            28 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L79 OR L67
L81            27 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L80 NOT L66


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FILE 'CASREACT' ENTERED AT 12:03:45 ON 23 OCT 2007
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'HCAPLUS' ENTERED AT 12:03:45 ON 23 OCT 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)
PROCESSING COMPLETED FOR L89
PROCESSING COMPLETED FOR L81
L91            30 DUP REM L89 L81 (1 DUPLICATE REMOVED)
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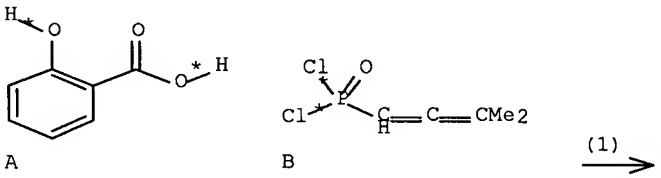
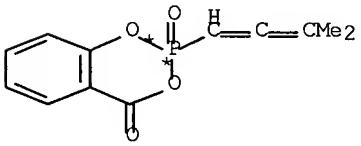
L91 ANSWER 1 OF 30 CASREACT COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 134:280921 CASREACT Full-text
TITLE: New phosphorus derivatives of salicylic acid
AUTHOR(S): Enchev, Dobromir D.
CORPORATE SOURCE: Department of Organic Chemistry, Faculty of Chemistry, "Bishop Konstantin Preslavski" University, Shoumen, 9700, Bulg.
SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (**2000**), 165, 243-248
CODEN: PSSLEC; ISSN: 1042-6507
PUBLISHER: Gordon & Breach Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The chemical of phosphorus derivs. of salicylic acid has been revived and the synthesis of alkadienephosphonate derivs. of salicylic acid is reported. Thus, reaction of salicylic acid with RR1C:C:CHP(O)Cl2 (R = Me, R1 = Me, Et; RR1 = (CH2)5) gave alkadienephosphonates I.

RX(1) OF 8 **A** + **B** ===> **C**



A B (1)



C
YIELD 72%

RX(1) RCT A **69-72-7**, B **13337-33-2**
RGT D 121-44-8 Et3N
PRO C **332926-48-4**
SOL 71-43-2 Benzene
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 2 OF 30 CASREACT COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 142:392466 CASREACT Full-text
TITLE: Reaction of 2-methoxy-1,3,2-dioxaphosphorino[4,5-b]pyridin-4(4H)-one with

hexafluoroacetone

AUTHOR(S): Mironov, V. F.; Burnaeva, L. M.; Litvinov, I. A.; Kotorova, Yu. Yu.; Dobrynin, A. B.; Musin, R. Z.; Konovalova, I. V.

CORPORATE SOURCE: Kazan State University, Kazan, 420008, Russia

SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (**2004**), 53(8), 1704-1710
CODEN: RCBUEY; ISSN: 1066-5285

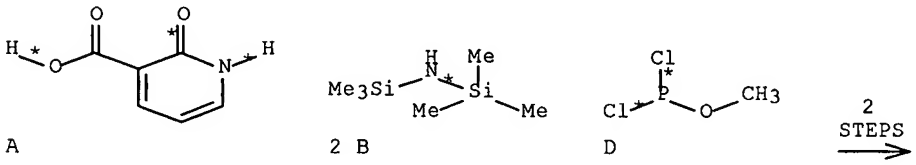
PUBLISHER: Springer Science+Business Media, Inc.

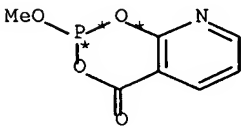
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ring expansion of 2-methoxypyridino[3,2-e]-1,3,2-dioxaphosphorin-4- one (3) by reaction with hexafluoroacetone gave pyridino[3,2-f]-1,3,2-dioxaphosphepins I, and after hydrolysis, 3-acyl-2-pyridone derivs. The reaction of 2- trimethylsiloxynicotinic acid trimethylsilyl ester (2) with MeOPCl2 gave compound 3, which upon reaction with CF3COCF3 gave unstable cyclic phosphate, pyridino-1,3,2-dioxaphosphepin-5-one 2-oxide, which transfers Me group onto pyridine ring giving I (6, R = Me) or undergoes partial hydrolysis to give pyridinium inner salt (7, shown as I, R = H). Complete hydrolysis of the reaction mixture gave 1-methyl-3-(2-hydroxy-3,3,3-trifluoro-2-trifluoromethylpropanoyl)-2(1H)-pyridinone (8) and its 1-hydro-analog (9). Crystal structure of 8 is reported.

RX(5) OF 10 COMPOSED OF RX(1), RX(2)
RX(5) **A** + 2 **B** + **D** ===> **E**





RX(1) RCT A **609-71-2**, B 999-97-3
PRO C 183274-22-8
CON 7 hours, 150 deg C
NTE thermal

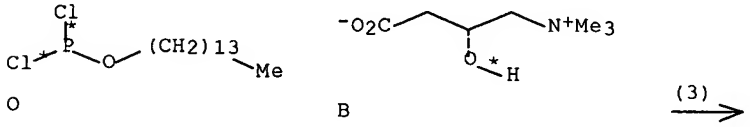
RX(2) RCT C 183274-22-8, D **3279-26-3**
PRO E **849790-20-1**
CON SUBSTAGE(1) 20 deg C
SUBSTAGE(2) 20 deg C -> 50 deg C

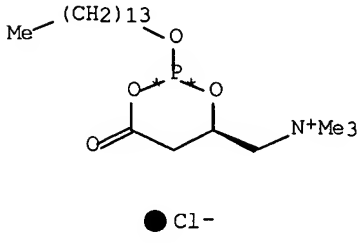
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 3 OF 30 CASREACT COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 137:353111 CASREACT Full-text
TITLE: Practical Synthesis of 3-Carboxy-(2R)-[[hydroxy[(tetradecyl)oxy]phosphinyl]oxy]-N,N,N-trimethyl-1-propanaminium Hydroxide Inner Salt (CPI975): A Carnitine Palmitoyltransferase I Inhibitor
AUTHOR(S): Prashad, Mahavir; Amedio, John C.; Ciszewski, Lech; Lee, George; Villa, Carmine; Chen, Kau-Ming; Prasad, Kapa; Repic, Oljan
CORPORATE SOURCE: Process R D Chemical and Analytical Development, Novartis Institute for Biomedical Research One Health Plaza, East Hanover, NJ, 07936, USA
SOURCE: Organic Process Research & Development (**2002**), 6(6), 773-776
CODEN: OPRDFK; ISSN: 1083-6160
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The preparation of 3-carboxy-(2R)-[[hydroxy[(tetradecyl)oxy]phosphinyl] oxy]-N,N,N-trimethyl-1-propanaminium hydroxide inner salt (1, CPI975), a carnitine palmitoyltransferase I inhibitor, is described. The reaction of 1-tetradecanol (2) with stoichiometric amts. of PCl3 in THF at -15 to -20° furnished 1-tetradecyl phosphorochloridate (3). Treatment of 3 directly with L-carnitine (7) in THF in the presence of 2,4,6-collidine, followed by oxidization with bromine, afforded a crude aqueous solution of 1. Desalting was done using a cheap, stable, and recyclable resin Amberlite XAD-4. The drug substance was purified by recrystn. from a mixture of ethanol and THF. The yield of 1 was 65% with 99.7% purity. Alternatively, instead of desalting with Amberlite XAD-4 resin, 1 can be isolated by an extraction with 1-decanol, followed by precipitation with acetone and recrystn. from ethanol and THF mixture

RX(3) OF 4 ...O + B ===> P





P

RX(3) RCT O **167685-49-6**, B **541-15-1**

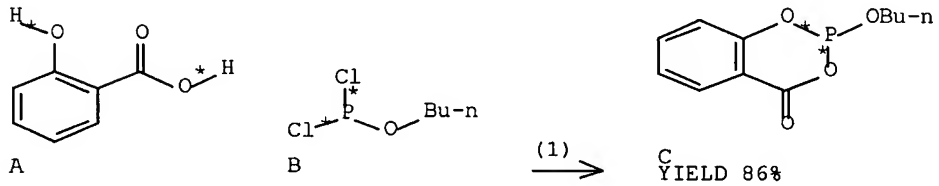
RGT E 108-75-8 s-Collidine
PRO P **474920-74-6**
SOL 109-99-9 THF
NTE scalable

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 4 OF 30 CASREACT COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 49:23948 CASREACT Full-text
TITLE: Reaction product of phosphorus trichloride with salicylic acid
AUTHOR(S): Cade, J. A.; Gerrard, W.
CORPORATE SOURCE: Northern Polytech., London
SOURCE: Chemistry & Industry (London, United Kingdom) (**1954**) 402
CODEN: CHINAG; ISSN: 0009-3068
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB Further evidence indicates that the reaction product (I) is the phosphorochloridite o-C6H4.O.PCl.O.CO. I is prepared in 85% yield from 1 mole PCl3, 1 mole salicylic acid, and 1 mole pyridine in Et2O at -10°, and b9 123-5°. BuOH (1 mole), 1 mole pyridine, and 1 mole I, in Et2O at -10° yield 93% of a compound (II), b0.03 99-100°, nD20 1.5250, identical with the reaction product of 1 mole BuOPCl2, 1 mole salicylic acid, and 2 moles pyridine in Et2O at -10° (b0.0 97-9°, yield 86%). II is believed to be o-C6H4.O.POO.CO.

RX(1) OF 1 **A** + **B** ===> **C**



A B C
YIELD 86%

RX(1) RCT A **69-72-7**, B **10496-13-6**
RGT D 110-86-1 Pyridine
PRO C **109017-74-5**
SOL 60-29-7 Et2O
NTE Classification: Heterocycle formation; O-Phosphorisation; Condensation; # Conditions: pyridine Et2O; -10 deg

=> d l91 5-30 ibib ed abs hitstr hitind

L91 ANSWER 5 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:437529 HCAPLUS Full-text
DOCUMENT NUMBER: 144:450875
TITLE: **Preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents
INVENTOR(S): Babu, Yarlagadda S.; Chand, Pooran; Wu, Minwan; Kotian, Pravin L.; Kumar, V. Satish; Lin, Tsu-Hsing; El-Kattan, Yahya; Ghosh, Ajit

K.
PATENT ASSIGNEE(S): Biocryst Pharmaceuticals, Inc., USA
SOURCE: PCT Int. Appl., 152 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006050161	A2	20060511	WO 2005-US39072	2005 1028
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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AU 2005302448	A1	20060511	AU 2005-302448	2005 1028
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CA 2585079	A1	20060511	CA 2005-2585079	2005 1028
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EP 1814561	A2	20070808	EP 2005-820258	2005 1028
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US 2006165655	A1	20060727	US 2006-332858	2006 0116
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WO 2006104945	A2	20061005	WO 2006-US10948	2006 0323
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WO 2006104945	A3	20070208		
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RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
US 2006234963	A1	20061019	US 2006-388060	

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IN 2007KN01720	A	20070727	IN 2007-KN1720		
					2007 0515
			<--		
PRIORITY APPLN. INFO.:			US 2004-623065P	P	
					2004 1029
			US 2005-641754P	P	
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			US 2005-665832P	P	
					2005 0329
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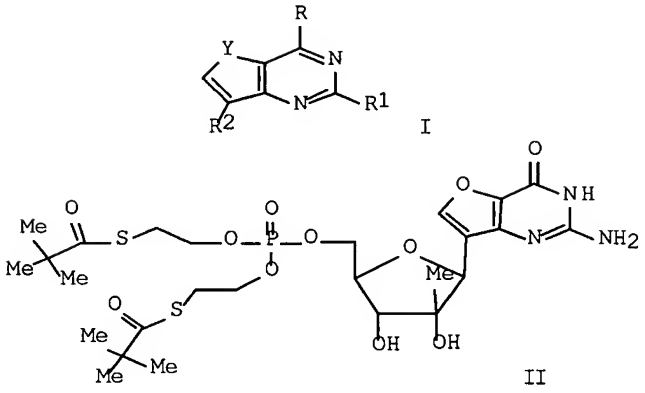
					2005 0622
			US 2005-728215P	P	
					2005 1019
			WO 2005-US39072	W	
					2005 1028

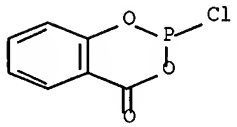
OTHER SOURCE(S): MARPAT 144:450875
ED Entered STN: 11 May 2006
GI



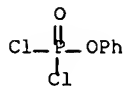
AB Furopyrimidine and thienopyrimidine nucleosides I, wherein Y is O, S; R is OR3, SR3, NR3R4, NR3NR4R5, alkyl, alkenyl, alkynyl, aryl, (CH2)n-CH(NHR3)CO2R4, (CH2)n-S-alkyl, (CH2)n-S-aryl, Cl, F, Br, I, CN, COOR3, CONR3R4, NHC(=NR3)NHR4, NR3OR4, NR3NO, NHCONHR3, NR3N=NR4, NR3N=CHR4, NR3C(O)NR4R5, NR3C(S)-NR4R5, NR3C(O)OR4, CH=N-OR3, NR3C(=NH)NR4R5, NR3C(O)NR4NR5R6, O-C(O)R3, OC(O)-OR3, ONH-C(O)O-alkyl, ONHC(O)O-aryl, ONR3R4, SNR3R4, S-ONR3R4, or SONR3R4; n is 0 0-5; R1 is H, NR3R4, Cl, F, OR3, SR3, NHCOR3, NHSO2R3, NHCONHR3, CN, alkyl, aryl, ONR3R4, or NRC3(O)OR4; R2 is a nucleoside sugar group; and R3-R6 are independently H, alkyl, alkenyl, alkynyl, cycloalkyl,

heterocyclic, aryl, acyl, SO2-alkyl and NO; or R3 and R4 together with the nitrogen to which they are attached **form** a pyrrolidino, piperidino, piperazino, azetidino, morpholino, or thio-morpholino ring; were **prepd** . and used as antitumor and antiviral agent. Title compds. are useful as antiviral agents, anticancer agents, and RNA or DNA polymerase inhibitors. The viral infection is selected from the group consisting of: hepatitis B, hepatitis C, human immunodeficiency virus, Polio, Coxsackie A and B, Rhino, Echo, small pox, Ebola, and West Nile virus. Thus, nucleoside II was **prepared** and is useful as antiviral and antitumor agent (no biol. data).

IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



IT **770-12-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)
RN 770-12-7 HCAPLUS
CN Phosphorodichloridic acid, phenyl ester (CA INDEX NAME)



CC 33-9 (Carbohydrates)
Section cross-reference(s): 1, 7, 28, 63
ST formulation prodrug human antitumor antiviral furopyrimidine thienopyrimidine nucleoside **prepn**; furopyrimidine thienopyrimidine nucleoside **prepn** antitumor antiviral human prodrug cytotoxicity
IT Antitumor agents
Antiviral agents
Cytotoxicity
Human
Neoplasm
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)
IT Nucleosides, **preparation**
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)
IT Drug delivery systems
(prodrugs; **preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)
IT Infection
(viral; **preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT Interferons
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(α; **preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 9001-92-7, Protease 9012-90-2, DNA polymerase 9014-24-8, RNA polymerase 9026-28-2, Hepatitis C virus polymerase 9028-93-7, Inosine monophosphatedehydrogenase 36791-04-5, Ribavirin 37259-58-8, Serine protease 69521-94-4, Thymosin α1 119567-79-2, Viramidine 206269-27-4, Levovirin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 885593-31-7P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 86133-07-5P 133508-48-2P 872534-80-0P 885592-93-8P
885592-94-9P 885592-95-0P 885592-96-1P 885592-97-2P
885592-98-3P 885592-99-4P 885593-05-5P 885593-07-7P
885593-09-9P 885593-12-4P 885593-14-6P 885593-21-5P
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885593-69-1P 885593-70-4P 885593-72-6P 885593-75-9P
885593-81-7P 885593-82-8P 885593-84-0P 885593-85-1P
885593-86-2P 885593-87-3P 885593-88-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 50-69-1, D-Ribose 60-34-4 107-14-2, Chloracetonitrile 108-95-2, Phenol, reactions 109-84-2 122-04-3 123-75-1, Pyrrolidine, reactions 503-29-7, Azetidine 628-22-8 685-87-0 765-30-0, Cyclopropylamine 2491-20-5 2537-48-6 3473-63-0, Formamidine acetate **5381-99-7** 5587-68-8, 4-Cyclopentene-1,3-dimethanol 5815-08-7 6306-52-1 10025-87-3, Phosphoric trichloride 34840-23-8 50859-18-2, Tributylammonium pyrophosphate 59463-56-8 86204-14-0 108549-23-1 168777-53-5 168777-55-7 188069-59-2 443642-31-7 728022-71-7 885593-83-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT **770-12-7P** 13039-63-9P 54623-25-5P 64363-77-5P 80765-78-2P 80795-53-5P 261910-17-2P 582310-87-0P 872201-70-2P 872201-71-3P 872201-72-4P 872201-73-5P 872201-86-0P 885592-50-7P 885592-55-2P 885592-59-6P 885592-61-0P 885592-63-2P 885592-66-5P 885592-67-6P 885592-68-7P 885592-69-8P 885592-70-1P 885592-71-2P 885592-72-3P 885592-73-4P 885592-74-5P 885592-75-6P 885592-76-7P 885592-77-8P 885592-78-9P 885592-79-0P 885592-80-3P 885592-81-4P 885592-82-5P 885592-83-6P 885592-84-7P 885592-85-8P 885592-86-9P 885592-87-0P 885592-88-1P 885592-89-2P 885592-90-5P 885592-91-6P 885592-92-7P 885593-00-0P 885593-01-1P 885593-02-2P 885593-03-3P 885593-04-4P 885593-06-6P 885593-08-8P 885593-10-2P 885593-11-3P 885593-13-5P 885593-15-7P 885593-16-8P 885593-17-9P 885593-18-0P 885593-19-1P 885593-20-4P 885593-22-6P 885593-23-7P 885593-24-8P 885593-25-9P 885593-26-0P 885593-29-3P 885593-30-6P 885593-32-8P 885593-33-9P 885593-34-0P 885593-35-1P 885593-36-2P 885593-37-3P 885593-39-5P 885593-40-8P 885593-41-9P 885593-42-0P 885593-43-1P 885593-45-3P

885593-46-4P 885593-47-5P 885593-48-6P 885593-50-0P
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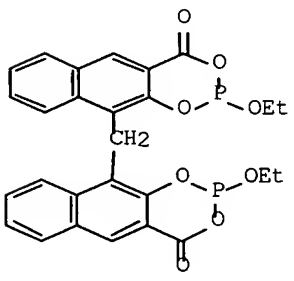
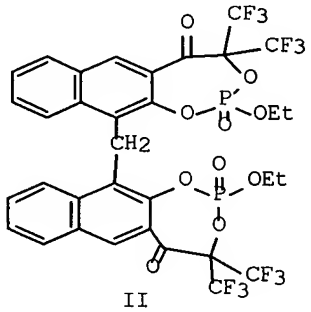
885593-73-7P 885593-74-8P 885593-76-0P 885593-77-1P
885593-78-2P 885593-79-3P 885593-80-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

IT 56-37-1, Benzyltriethylammonium chloride 121-69-7, N,N-Dimethylaniline, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(**preparation** of therapeutic furopyrimidine and thienopyrimidine nucleosides as antitumor and antiviral agents)

L91 ANSWER 6 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1026983 HCAPLUS Full-text
DOCUMENT NUMBER: 147:143496
TITLE: Cyclic P(III)-phosphorylated derivatives of pamoic acid: Reaction of 4,4'-methylenebis(2-ethoxynaphtho[2,3-d]-1,3,2-dioxaphosphorin-4-one) with hexafluoroacetone
AUTHOR(S): Burnaeva, L. M.; Mironov, V. F.; Abdrakhmanova, L. M.; Ivkova, G. A.; Balandina, A. A.; Latypov, Sh. K.; Konovalova, I. V.; Pudovik, A. N.
CORPORATE SOURCE: Kazan State University, Kazan, Tatarstan, Russia
SOURCE: Russian Journal of General Chemistry (**2006**), 76(8), 1338-1339
CODEN: RJGCEK; ISSN: 1070-3632
PUBLISHER: Pleiades Publishing, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 04 Oct 2006
GI



I



II

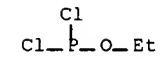
AB Insertion reaction of hexafluoroacetone into phosphorylated derivative of pamoic acid, e.g., methylenebis(ethoxynaphtho[2,3-d]-1,3,2- dioxaphosphorinone) I, in CCl4/CH2Cl2 at -40° and then warmed to 20° to give 87% yield of a cyclic P(III)-phosphorylated derivative II. I was **prepared** from reacting excess EtOPCl2 with pamoic acid trimethylsilyl derivative

IT **1498-42-6**, Ethyl phosphorodichloridite
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of hexafluoroacetone with phosphorylated derivative of

pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos phepindione)

RN 1498-42-6 HCAPLUS

CN Phosphorodichloridous acid, ethyl ester (CA INDEX NAME)



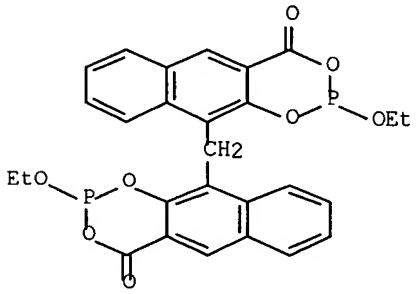
IT **943432-74-4P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos phepindione)

RN 943432-74-4 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



CC 29-7 (Organometallic and Organometalloidal Compounds)

ST pamoic acid phosphorylated **prepn** insertion ring enlargement fluoroacetone; naphthodioxaphosphepindione trifluoromethyl; methylenebisnaphthodioxaphosphorinone insertion ring enlargement fluoroacetone

IT 684-16-2, Hexafluoroacetone **1498-42-6**, Ethyl phosphorodichloridite 202654-67-9

RL: **RCT (Reactant)**; RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos phepindione)

IT **943432-74-4P** 943432-75-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(reaction of hexafluoroacetone with phosphorylated derivative of pamoic acid to give cyclic bis(trifluoromethyl)naphthodioxaphos phepindione)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 7 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:450603 HCAPLUS Full-text

DOCUMENT NUMBER: 141:8868

TITLE: Process for **manufacture** of nitrile compounds from ethylenically unsaturated compounds

INVENTOR(S): Galland, Jean Christophe; Didillon, Blaise; Marion, Philippe; Bourgeois, Damien

PATENT ASSIGNEE(S): Rhodia Polyamide Intermediates, Fr.
SOURCE: Fr. Demande, 24 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2847898	A1	20040604	FR 2002-15115	20021202
WO 2004060855	A1	20040722	WO 2003-FR3475	20031125
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EP 1567478	A1	20050831	EP 2003-789490	20031125
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CN 1732148	A	20060208	CN 2003-80107525	20031125
JP 2006516543	T	20060706	JP 2004-564272	20031125
IN 2005CN01083	A	20070622	IN 2005-CN1083	20050601
US 2006142609	A1	20060629	US 2005-537260	20051014

PRIORITY APPLN. INFO.:	FR 2002-15115	A	20021202
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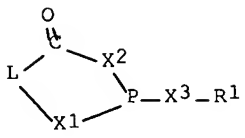
OTHER SOURCE(S): CASREACT 141:8868; MARPAT 141:8868

ED Entered STN: 04 Jun 2004
GI



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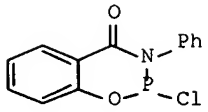
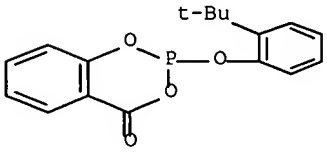


II

AB Nitriles are **manufactured** by hydrocyanation of ethylenically unsatd. compds. in liquid media in the presence of transition metal compds. and ligands I [X1, X2 = O or NR2, R2 = H, alkyl, aryl, sulfonyl, cycloalkyl, or carbonyl, X3 = covalent bond, O, or NR2, R1 = (heteroatom-containing) C1-12 alkyl or aromatic or cycloaliph. radical optionally substituted and optionally containing heteroatoms and ≥1 condensed or noncondensed ring, L = (heteroatom-containing) divalent C1-12 alkyl or divalent aromatic or cycloaliph. radical optionally substituted and optionally containing heteroatoms or ≥1 condensed or noncondensed ring]. The process is particularly useful for the **synthesis** of adiponitrile starting from butadiene. A typical I was **manufactured** by dropwise adding THF containing. 600 mg o-tert-butylphenol and 0.85 mL NEt3 to a THF-PhMe solution containing 1.1 g phosphorochloridite II at -10° with stirring and stirring the resulting suspension 18 h at 25°. thus, adiponitrile was **prepared** in 74% yield from 3-pentenenitrile via cyanation with acetone cyanohydrin in the presence of I [R1 = o-tolyl, L = 1,2-phenylene, X1 = X3 = O, X2 = NPh], bis(1,5-cyclooctadiene)nickel and ZnCl2.

IT **696664-78-5**
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

RN 696664-78-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[2-(1,1-dimethylethyl)phenoxy]- (CA INDEX NAME)



IC ICM C07C255-04
ICS C07C253-10; C07F009-6584

CC **45-4** (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 67

ST nitrile **manuf** unsatd compd hydrocyanation catalyst transition metal; phosphorus cyclic compd carbonyl catalyst hydrocyanation unsatd compd

IT Isomerization
Isomerization catalysts
(isomerization of pentenenitriles in **products** mixts. from hydrocyanation of butadiene in presence of transition metal compds. and cyclic phosphorus compds.)

IT Hydrocyanation
Hydrocyanation catalysts
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

IT Lewis acids
Transition metal compounds
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

IT 696664-75-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(catalyst precursor; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)

IT 88-18-6, o-tert-Butylphenol 91-40-7, N-Phenylanthranilic acid 95-48-7, o-Cresol, reactions 108-39-4, m-Cresol, reactions 15494-45-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalyst precursor; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)

IT 7646-85-7, Zinc chloride, uses
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)

IT 7488-55-3, Stannous sulfate 7699-45-8, Zinc bromide 7772-99-8, Stannous chloride, uses 7773-01-5, Manganese chloride 7789-42-6, Cadmium bromide 10031-24-0, Stannous bromide 10108-64-2, Cadmium chloride 10139-47-6, Zinc iodide 13446-03-2, Manganese bromide 31186-57-9, Stannous tartarate 36554-90-2 128008-30-0
RL: CAT (Catalyst use); USES (Uses)
(cocatalyst; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

IT 75-86-5, Acetone cyanohydrin
RL: RGT (Reagent); RACT (Reactant or reagent)
(cyanating agent; **manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)

IT 1295-35-8, Bis(1,5-cyclooctadiene)nickel
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)

IT 696664-71-8P 696664-72-9P 696664-73-0P 696664-74-1P 696664-76-3P 696664-77-4P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)

IT 111-69-3P, Adiponitrile
RL: IMF (Industrial manufacture); PREP (Preparation)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic

phosphorus compds., and, optionally, Lewis acid cocatalysts)
IT 4635-87-4, 3-Pentenenitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts)
IT 7439-88-5D, Iridium, compds. 7439-89-6D, Iron, compds. 7439-97-6D, Mercury, compds. 7440-04-2D, Osmium, compds. 7440-05-3, Palladium, uses 7440-06-4D, Platinum, compds. 7440-16-6D, Rhodium, compds. 7440-18-8D, Ruthenium, compds. 7440-22-4D, Silver, compds. 7440-43-9D, Cadmium, compds. 7440-48-4D, Cobalt, compds. 7440-50-8D, Copper, compds. 7440-57-5D, Gold, compds. 7440-66-6D, Zinc, compds. 12266-58-9, Bis(acrylonitrile)nickel 14220-17-8, Potassium tetracyanonickelate 15133-82-1, Tetrakis(triphenylphosphine)nickel **696664-78-5**
RL: CAT (Catalyst use); USES (Uses)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
IT 4553-62-2P, 2-Methylglutaronitrile 17611-82-4P, 2-Ethylsuccinonitrile
RL: IMF (Industrial manufacture); PREP (Preparation)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
IT 78-79-5, Isoprene, reactions 100-42-5, Styrene, reactions 106-99-0, Butadiene, reactions 110-59-8, Valeronitrile 110-83-8, Cyclohexene, reactions 111-78-4, 1,5-Cyclooctadiene 592-42-7, 1,5-Hexadiene 592-51-8, 4-Pentenenitrile 1335-86-0, Methylcyclohexene 4403-61-6, 2-Methyl-2-butenenitrile 13284-42-9, 2-Pentenenitrile 16529-56-9, 2-Methyl-3-butenenitrile 25013-15-4, Methylstyrene 26588-32-9, Vinylnaphthalene
RL: RCT (Reactant); RACT (Reactant or reagent)
(**manufacture** of nitrile compds. from ethylenically unsatd. compds. in presence of transition metal compds., cyclic phosphorus compds., and, optionally, Lewis acid cocatalysts in liquid media)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 8 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:757718 HCAPLUS Full-text
DOCUMENT NUMBER: 139:277002
TITLE: **Preparation** of novel phosoxophite ligands and use thereof in carbonylation processes
INVENTOR(S): Peng, Wei-Jun; Bryant, David Robert
PATENT ASSIGNEE(S): Union Carbide Chemicals & Plastics Technology Corporation, USA
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003078444	A2	20030925	WO 2003-US6456	20030304

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WO 2003078444 A3 20031218
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AU 2003230587 A1 20030929 AU 2003-230587
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EP 1485392 A2 20041215 EP 2003-723671
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CN 1639177 A 20050713 CN 2003-805425
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US 2006100453 A1 20060511 US 2004-504247
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US 7196230 B2 20070327

PRIORITY APPLN. INFO.: US 2002-363725P P
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WO 2003-US6456 W
2003
0304

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OTHER SOURCE(S): CASREACT 139:277002; MARPAT 139:277002

ED Entered STN: 26 Sep 2003

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

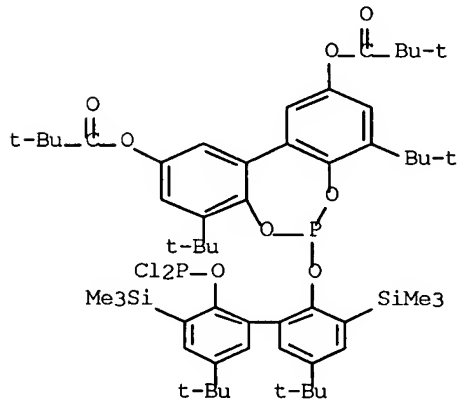
AB A novel organophosphorus composition I and II (A, Z = H, halo, monovalent hydrocarbyl radicals, tri(hydrocarbyl)silyl radicals, etc.; B, Y = aryl, tertiary alkyl, tri(hydrocarbyl)silyl radicals, etc.; R1 = H, monovalent alkyl, aryl radicals; n = 0-2; X = (un)substituted alkyl and aryl diradicals) and **synthesis** thereof, the composition being characterized by one phosphite moiety, one phosoxophite moiety, and a plurality of sterically bulky substituents. The novel composition finds utility as a ligand in Group VIII transition metal phosoxophite complex catalysts and complex catalyst

precursors that are used in carbonylation processes, preferably, hydroformylation processes. Addnl., there is disclosed a novel method of **preparing** a phosphoromonochloridite composition that finds utility as a precursor to the novel phosoxophite composition Thus, reaction of 3,3'-di-tert-butyl-5,5'-di-tert-pivaloyloxy-2,2'-biphenol with PCl3 in Et2O/THF in the presence of N,N-dimethylaniline followed by sequential treatment with 3,3'-bis(trimethylsilyl)-5,5'-di-tert- butyl-2,2'-biphenol/Et3N/THF and 3,5-dibromosalicylic acid/Et3N/THF gave title phosoxophite which was used as ligand in Rh(CO)2(acac) catalyzed hydroformylation of 2-pentenol.

IT **604799-10-2P 604799-12-4P 604799-14-6P**
604799-15-7P 604799-16-8P 604799-17-9P
604799-18-0P 604799-19-1P 604799-20-4P
604799-22-6P 604799-24-8P 604799-25-9P
604799-27-1P 604799-29-3P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

RN 604799-10-2 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, 6-[[2'-[(dichlorophosphino)oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-4,8-bis(1,1-dimethylethyl)dibenzo[d,f][1,3,2]dioxaphosphepin-2,10-diyl ester (9CI) (CA INDEX NAME)



RN 604799-12-4 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, 6-[[2'-[[6,8-bis(1-methylethyl)-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-4,8-bis(1,1-dimethylethyl)dibenzo[d,f][1,3,2]dioxaphosphepin-2,10-diyl ester (9CI) (CA INDEX NAME)

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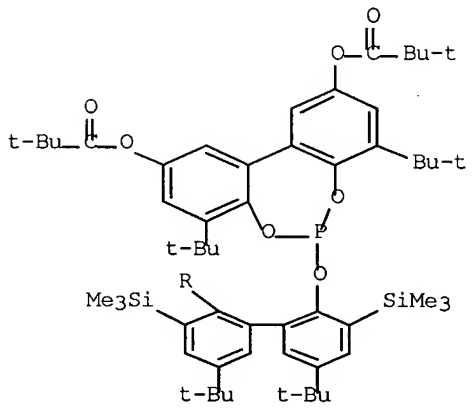

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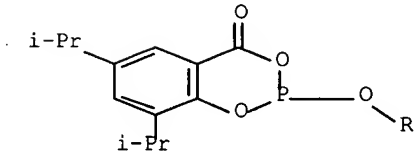

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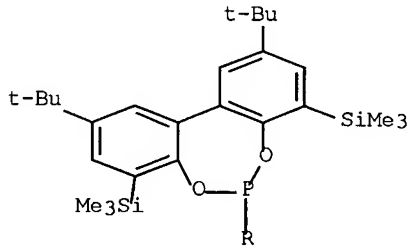
CN Propanoic acid, 2,2-dimethyl-, 6-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-6'-[(6,8-dibromo-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl)oxy]-5,5'-bis(1,1-dimethylethyl)[1,1'-biphenyl]-3,3'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



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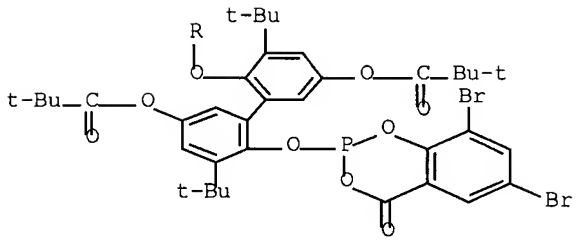
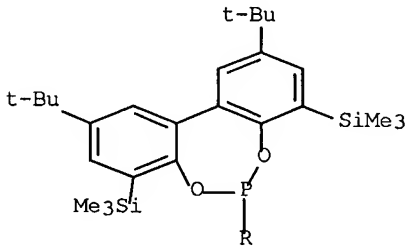


RN 604799-15-7 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, 6-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-6'-[[6,8-bis(1-methylethyl)-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl]oxy]-5,5'-bis(1,1-dimethylethyl)[1,1'-biphenyl]-3,3'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



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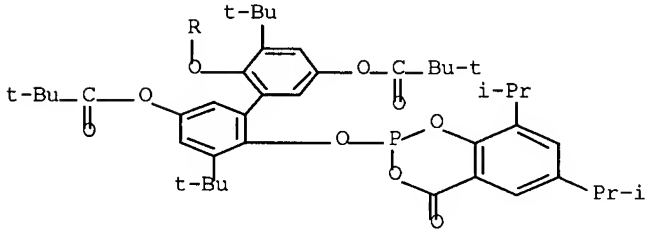

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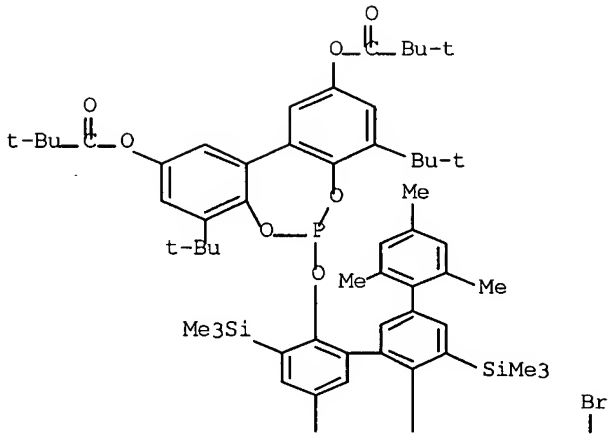

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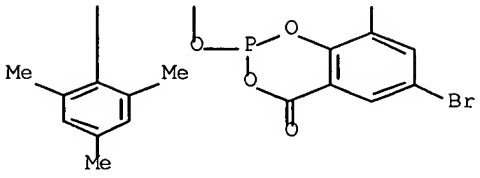
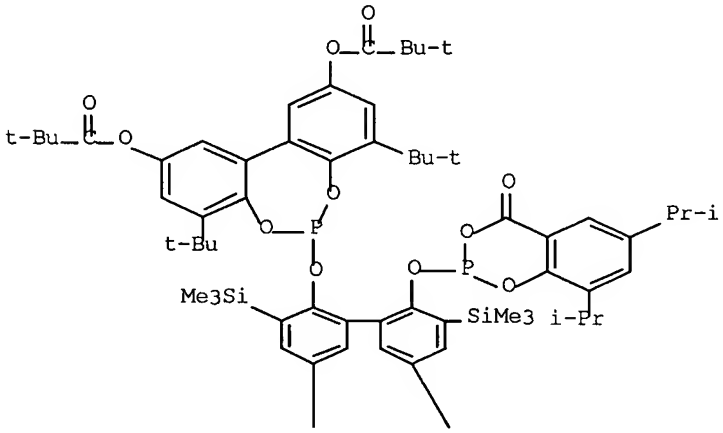


RN 604799-17-9 HCAPLUS

CN Propanoic acid, 2,2-dimethyl-, 6-[[6''-[[6,8-bis(1-methylethyl)-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl]oxy]-2,2''',4,4''',6,6'''-hexamethyl-5,5''-bis(trimethylsilyl)[1,1':3',1'':3'',1'''-quaterphenyl]-4'-yl]oxy]-4,8-bis(1,1-dimethylethyl)dibenzo[d,f][1,3,2]dioxaphosphepin-2,10-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



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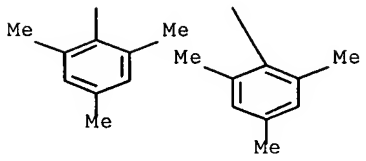

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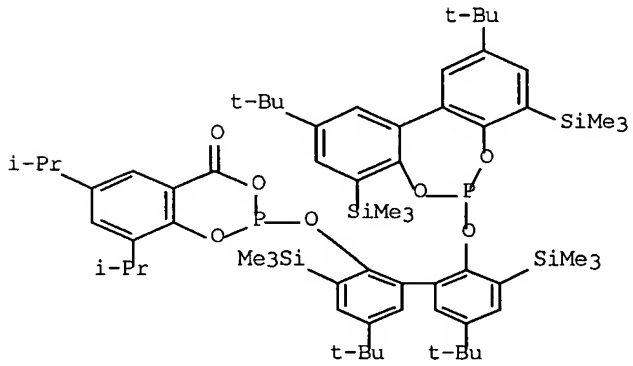
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-bis(1-methylethyl)- (CA INDEX NAME)



RN 604799-19-1 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[6''-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5',5''-bis(1,1-dimethylethyl)-2,2''',4,4''',6,6'''-hexamethyl[1,1':3',1'':3'',1'''-quaterphenyl]-4'-yl]oxy]-6,8-bis(1-methylethyl)- (9CI) (CA INDEX NAME)

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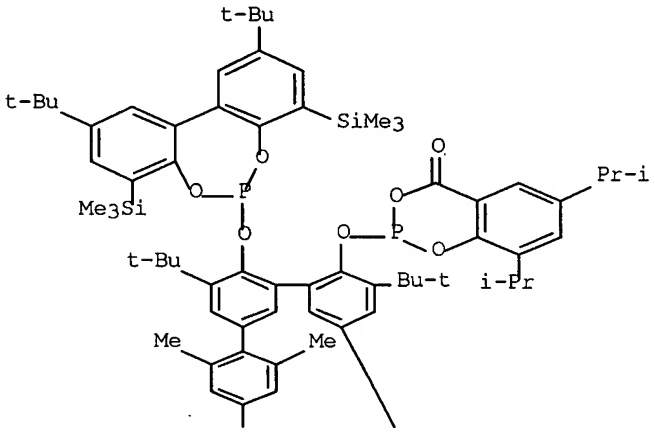

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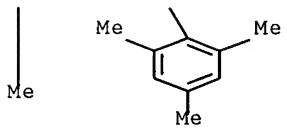
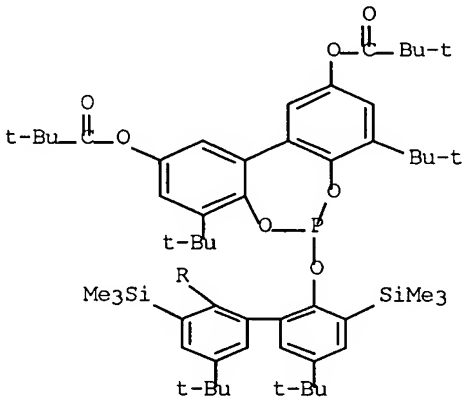


RN 604799-20-4 HCAPLUS
CN Propanoic acid, 2,2-dimethyl-, 6-[[2'-[(6,8-dibromo-4-oxo-4H-1,3,2-benzodioxaphosphorin-2-yl)oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-4,8-bis(1,1-dimethylethyl)dibenzo[d,f][1,3,2]dioxaphosphepin-2,10-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



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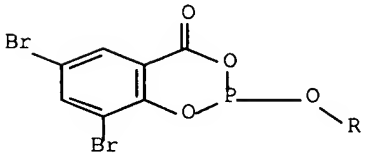
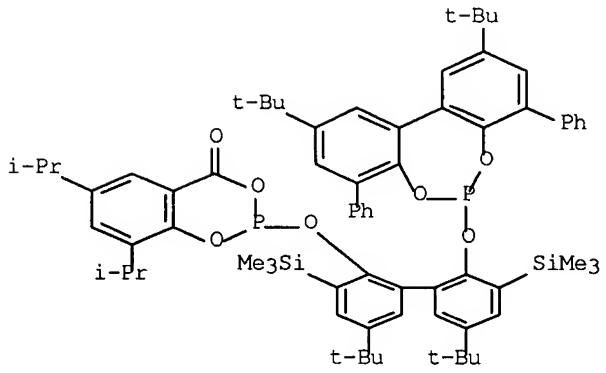
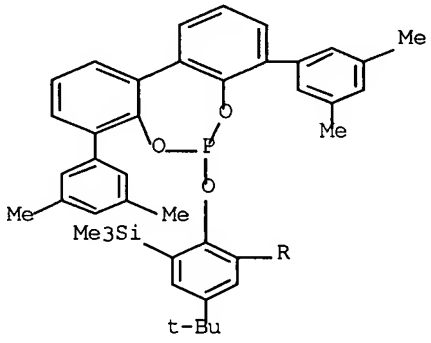


RN 604799-22-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[2,10-bis(1,1-dimethylethyl)-4,8-diphenyldibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-bis(1-methylethyl)- (CA INDEX NAME)



RN 604799-24-8 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[4,8-bis(3,5-dimethylphenyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-dibromo- (CA INDEX NAME)

PAGE 1-A



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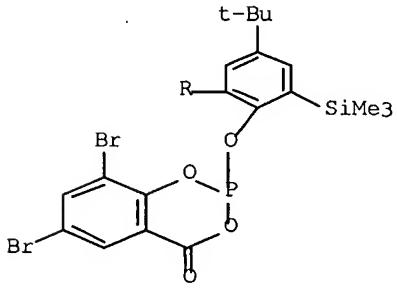

RN 604799-25-9 HCAPLUS
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dimethylphenyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-bis(1-methylethyl)- (CA INDEX NAME)

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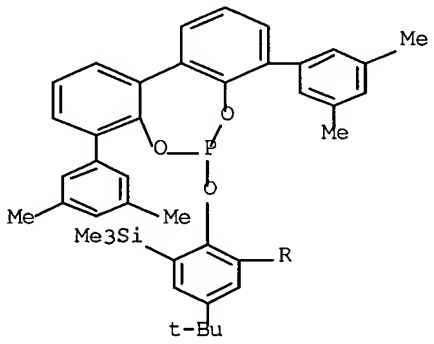

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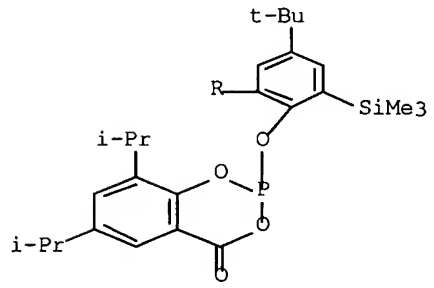
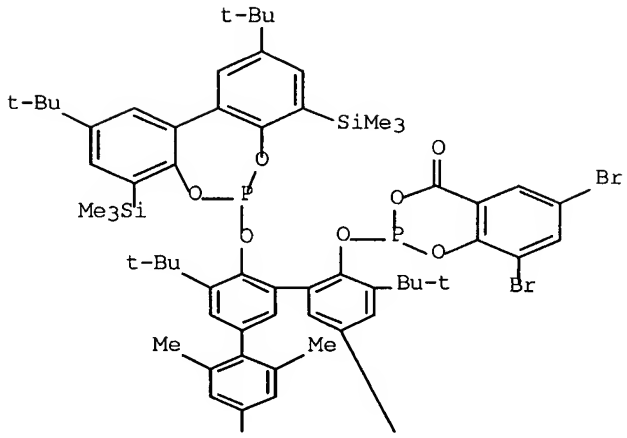


RN 604799-27-1 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[6''-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5',5''-bis(1,1-dimethylethyl)-2,2''',4,4''',6,6'''-hexamethyl[1,1':3',1'':3'',1'''-quaterphenyl]-4'-yl]oxy]-6,8-dibromo- (9CI) (CA INDEX NAME)

PAGE 1-A



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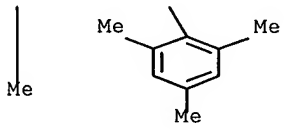
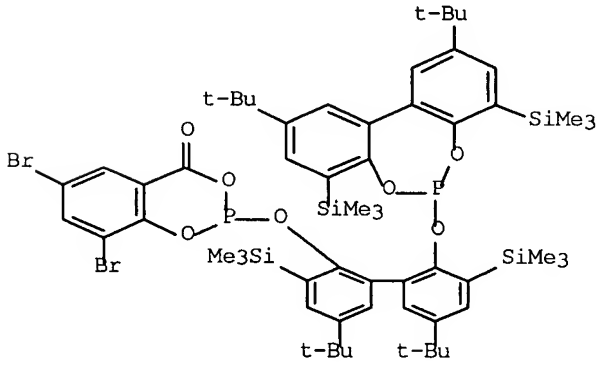


RN 604799-29-3 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[2,10-bis(1,1-dimethylethyl)-4,8-bis(trimethylsilyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-5,5'-bis(1,1-dimethylethyl)-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2-yl]oxy]-6,8-dibromo- (CA INDEX NAME)



IC ICM C07F009-6574
ICS C07F015-00; C07C045-50
CC 29-7 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 23
ST phosoxophite ligand **prepn** transition metal catalyzed

hydroformylation; carbonylation hydroacylation hydrocyanation hydroamidation hydroesterification hydrocarboxylation catalyst phosoxophite complex

IT Acylation catalysts
Amidation catalysts
(hydro-; **preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT Alkoxycarbonylation catalysts
Carbonylation catalysts
Hydrocyanation catalysts
Hydroformylation catalysts
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT Carboxylation catalysts
(reductive; **preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT 96-33-3, Methyl acrylate 100-42-5, Styrene, reactions 108-05-4, Vinyl acetate, reactions 39161-19-8, 3-Penten-1-ol
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroformylation; **preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT 7439-88-5D, Iridium, complexes 7440-16-6D, Rhodium, complexes 7440-18-8D, Ruthenium, complexes 7440-48-4D, Cobalt, complexes 14874-82-9, (Acetylacetonato)dicarbonylrhodium
RL: CAT (Catalyst use); USES (Uses)
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT **604799-10-2P** **604799-12-4P** 604799-13-5P **604799-14-6P** **604799-15-7P** **604799-16-8P** **604799-17-9P** **604799-18-0P** **604799-19-1P** **604799-20-4P** 604799-21-5P **604799-22-6P** 604799-23-7P **604799-24-8P** **604799-25-9P** 604799-26-0P **604799-27-1P** 604799-28-2P **604799-29-3P** 604799-30-6P 604799-31-7P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT 111-66-0, 1-Octene 111-67-1, 2-Octene 2215-21-6, 3,5-Diisopropylsalicylic acid 3147-55-5 3639-21-2, 2-Ethyl-2-hydroxybutyric acid 17154-39-1 604799-08-8 604799-11-3, 3,3'-Di(trimethylsilyl)-5,5'-di(2,4,6-trimethylphenyl)-2,2'-biphenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

IT 604799-09-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** of novel phosoxophite ligands and use thereof in transition metal mediated catalytic processes)

L91 ANSWER 9 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:737766 HCAPLUS Full-text
DOCUMENT NUMBER: 139:246118
TITLE: Safer and simplified process for **production** of bisphosphites containing a dioxaphosphorinone moiety in three steps from salicylic acid derivatives, phosphorus trihalides, diols and halophosphites
INVENTOR(S): Borgmann, Cornelia
PATENT ASSIGNEE(S): OXENO Olefinchemie GmbH, Germany
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003076448	A1	20030918	WO 2002-EP13418	2002 1128
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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EP 1483274	A1	20041208	EP 2002-792822	2002 1128
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ES 2242895	T3	20051116	ES 2002-2792822	2002 1128
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PRIORITY APPLN. INFO.:			DE 2002-10210918 A	2002 0313
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OTHER SOURCE(S): CASREACT 139:246118; MARPAT 139:246118
ED Entered STN: 19 Sep 2003
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

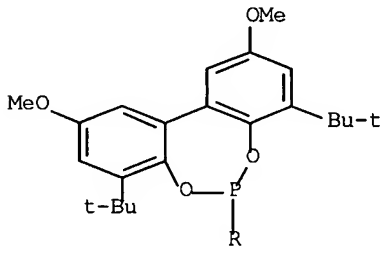
AB The invention relates to a method for the **production** of bisphosphites, I (R1-R4 = H, C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon, F, Cl, Br, I, CF3, alkoxy, organosulfonyl, etc.; Q = C1-50 divalent aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aliphatic-aromatic, hydrocarbon, etc.; W, X = C1-50 aliphatic, alicyclic, aliphatic-alicyclic, heterocyclic, aliphatic-heterocyclic, aromatic, aromatic-aromatic, aliphatic-aromatic hydrocarbon), which comprise dioxaphosphorinone components. The 3-step process entails (1) reaction of an (un)substituted salicylic acid derivative with PY3 (Y = Cl, Br, iodo) and base, preferably a tertiary amine, in an aprotic, nonpolar solvent, preferably C6H6, PhMe, PhEt or cyclohexane, to **form** halo-substituted benzodioxaphosphorinone intermediate III (same R1-R4, Y); (2) reaction of HO-Q-OH (same Q) with Z-P(OW)OX (same Q, W, X) in presence of a tertiary amine in a solvent as previously described to give intermediate HO-Q-O-P(OW)OX; (3) reaction of intermediate steps (1) and (2) to give bisphosphites I, useful industrially as antioxidants, as heat stabilizers for polymers such as PVC, and especially as ligands for transition-metal catalysis (no data). Base.HY or base.HZ byproducts are filtered off after at least one of these 3 steps. This process is advantageous compared to those described in prior art since no corrosive HCl gas is emitted, and the process is suitable for large-scale **production** Thus, reaction of 3,3'-di-tert-butyl-2,2'-dihydroxy-5,5'- dimethoxybiphenyl with dioxaphospha heterocycles **formed** from reaction of salicylic acid and 3,3'-di-tert-butyl-2,2'-dihydroxy-5,5'-dimethoxybiphenyl with PCl3 in presence of Et3N gave title compound II.

IT **352662-26-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)

RN 352662-26-1 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[[2'-[[4,8-bis(1,1-dimethylethyl)-2,10-dimethoxydibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-3,3'-bis(1,1-dimethylethyl)-5,5'-dimethoxy[1,1'-biphenyl]-2-yl]oxy]- (CA INDEX NAME)

PAGE 1-A



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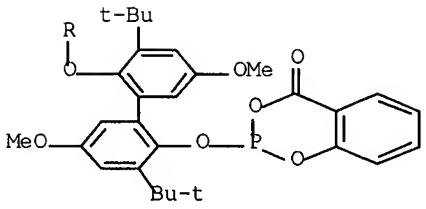

IC ICM C07F009-6574
CC **29-7** (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): **45**
ST bisphosphite dioxaphosphorinone **prepn** process; dioxaphospha heterocycle **prepn** reaction dihydroxy dimethoxybiphenyl
IT Phosphites
RL: SPN (Synthetic preparation); PREP (Preparation)
(bisphosphites; improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT Glycols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT Heterocyclic compounds
RL: SPN (Synthetic preparation); PREP (Preparation)
(phosphorus; improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT Amines, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(tertiary; improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT 69-72-7, Salicylic acid, reactions 14078-41-2, 3,3'-Di-tert-butyl-2,2'-dihydroxy-5,5'-dimethoxybiphenyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT **352662-26-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
IT 71-43-2, Benzene, uses 100-41-4, Ethylbenzene, uses 108-88-3, Toluene, uses 110-82-7, Cyclohexane, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; improved **preparation** of bisphosphites containing dioxaphosphorinone moiety from salicylic acid derivs., P trihalides, diols and helophosphites)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 10 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:697043 HCAPLUS Full-text
DOCUMENT NUMBER: 139:230954
TITLE: **Preparation** of nucleotide mimics and their prodrugs as antiviral, antibacterial, and antitumor agents
INVENTOR(S): Cook, Phillip Dan; Wang, Guangyi; Bruice,

Thomas W.; Boyle, Nicholas A.; Leeds, Janet M.; Brooks, Jennifer L.; Prhavc, Marija; Ariza, Maria Eugenia; Fagan, Patrick C.; Jin, Yi; Rajwanshi, Vivek K.; Tucker, Kathleen D.

PATENT ASSIGNEE(S): Biota, Inc., USA

SOURCE: PCT Int. Appl., 184 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072757	A2	20030904	WO 2003-US6368	2003 0228
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WO 2003072757	A3	20040722		
WO 2003072757	A9	20041021		
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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US 2004059104	A1	20040325	US 2003-376654	2003 0228
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EP 1485395	A2	20041215	EP 2003-713832	2003 0228
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PRIORITY APPLN. INFO.:			US 2002-360699P P	2002 0228

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WO 2003-US6368 W 20030228
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OTHER SOURCE(S): MARPAT 139:230954
ED Entered STN: 05 Sep 2003

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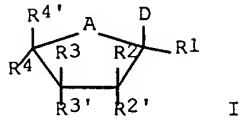
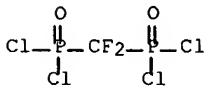


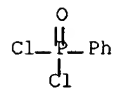
I

AB Nucleotide diphosphate mimics and nucleotide triphosphate mimics I, wherein A is O, S, NH, NR; R4' is LR5; L is O, S, NH, NR, CY2O, CY3S, CY2NH, CY2, CY2CY2, CY2OCY2, CY2SCY2, CY2NHCY2; Y is H, halogen, alkyl, alkenyl, alkynyl, R5 is substituted di- or triphosphate; R is alkyl, alkenyl, alkynyl, aryl, acyl, aralkyl; R1-R4 and R2'-R3' are independently H, halogen, OH, SH, NH2, NHOH, N3, NO2, CHO, CO2H, CN, CONH2, CO2R, R, OR, SR, SSR, NHR, NR2; D is nucleobase, which contain diphosphate or triphosphate moiety mimics and optionally sugar-modifications and/or base-modifications were **prepared** as antiviral, antibacterial, and antitumor agents. The present invention provides a method for the treatment of viral infections, microbial infections, and proliferative disorders. The present invention also relates to pharmaceutical compns. comprising the compds. of the present invention optionally in combination with other pharmaceutically active agents. Thus, 3'-azido-3'-deoxythymidine 5'-α-P-borano-β,γ-(difluoromethylene)triphosphate was **prepared** and tested in vitro as antiviral, antibacterial, and antitumor agent and HIV reverse transcriptase inhibitor (Ki = 0.008-0.061 μM).

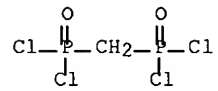
IT **591220-76-7P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
RN 591220-76-7 HCAPLUS
CN Phosphonic dichloride, (difluoromethylene)bis- (9CI) (CA INDEX NAME)



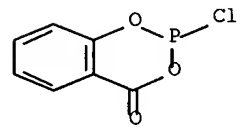
IT **824-72-6 1499-29-2 5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
RN 824-72-6 HCAPLUS
CN Phosphonic dichloride, P-phenyl- (CA INDEX NAME)



RN 1499-29-2 HCAPLUS
CN Phosphonic dichloride, P,P'-methylenebis- (CA INDEX NAME)



RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



IC ICM C12N
CC 33-9 (Carbohydrates)
Section cross-reference(s): 1, 7, 63
ST nucleotide **prepn** prodrug antiviral antibacterial antitumor human
IT Infection
(bacterial; **preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT Antibacterial agents
Antitumor agents
Antiviral agents
Human
Neoplasm
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT Nucleotides, **preparation**
RL: IMF (Industrial manufacture); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT Drug delivery systems
(prodrugs; **preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT Infection
(viral; **preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT 9068-38-6, Reverse transcriptase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(HIV; **preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT 9040-57-7, Ribonucleotide reductase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**preparation** of nucleotide mimics and their prodrugs as

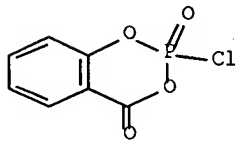
antiviral antibacterial and antitumor agents)
IT 138273-01-5P 141171-21-3P 591220-71-2P 591220-72-3P
591220-73-4P 591220-74-5P 591220-75-6P 591220-77-8P
591220-80-3P 591220-81-4P 591220-82-5P 591220-83-6P
591220-84-7P 591220-85-8P 591220-86-9P 591220-87-0P
591220-88-1P 591220-90-5P 591220-95-0P 591221-01-1P
591221-02-2P 591221-04-4P 591221-05-5P 591221-07-7P
591221-08-8P 591221-09-9P 591221-10-2P 591221-11-3P
591221-14-6P 591221-15-7P 591752-12-4P 591752-14-6P
591752-22-6P 591752-23-7P 591752-50-0P 591752-52-2P
591753-66-1P 591753-67-2P 591753-69-4P 591753-70-7P
591753-71-8P 591753-72-9P 591753-73-0P 591753-76-3P
591753-79-6P 591753-92-3P 591753-93-4P 591753-94-5P
RL: IMF (Industrial manufacture); PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT 98-74-8P 53064-79-2P 78715-57-8P 78715-59-0P 81336-70-1P
81336-71-2P 92340-84-6P 153121-88-1P 172293-43-5P
499970-82-0P **591220-76-7P** 591220-78-9P 591220-79-0P
591220-89-2P 591220-91-6P 591220-92-7P 591220-93-8P
591220-94-9P 591220-96-1P 591220-98-3P 591221-00-0P
591221-06-6P 591221-12-4P 591221-13-5P 591752-51-1P
591753-91-2P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT **824-72-6** 993-13-5, Methylphosphonic acid
1499-29-2 1660-95-3 1984-15-2 3416-05-5
5381-99-7 6145-31-9 7288-28-0 13966-08-0
18997-19-8 22560-50-5 30516-87-1, AZT 36653-82-4,
1-Hexadecanol 40290-32-2 56183-63-2 64638-13-7 74257-00-4
94892-66-7 95058-81-4 101249-81-4 104714-96-7 130306-02-4
133745-75-2, N-Fluorobenzenesulfonimide 163706-61-4
183584-85-2 443642-29-3 591220-97-2 591753-75-2
591753-77-4 591753-85-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)
IT 88996-23-0
RL: RGT (Reagent); RACT (Reactant or reagent)
(**preparation** of nucleotide mimics and their prodrugs as antiviral antibacterial and antitumor agents)

L91 ANSWER 11 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:625303 HCAPLUS Full-text
DOCUMENT NUMBER: 132:23164
TITLE: **Synthesis** of 3'-Sugar- and Base-Modified Nucleotides and Their Application as Potent Chain Terminators in DNA Sequencing
AUTHOR(S): Stolze, Karen; Koert, Ulrich; Klingel, Sven; Sagner, Gregor; Wartbichler, Regina; Engels, Joachim W.
CORPORATE SOURCE: Institut fur Organische und Bioorganische Chemie, Humboldt-Universitat zu Berlin, Berlin, D-10115, Germany
SOURCE: Helvetica Chimica Acta (**1999**), 82(9), 1311-1323
CODEN: HCACAV; ISSN: 0018-019X
PUBLISHER: Verlag Helvetica Chimica Acta
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 01 Oct 1999

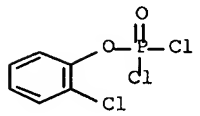
AB Two 3'-modified and three base-modified ddNTPs were **synthesized** and tested with several DNA polymerases for incorporation activity. Starting from 3'-azido-3'-deoxythymidine (AZT), we were able to **produce** 3'-deoxy-3'-isocyanato- thymidine and 3'-deoxy-3'-isothiocyanatothymidine in a rapid **synthesis** based on the solid-support approach. These 3'-functionalities could be used to attach a spacer mol. via urea and thiourea groups, resp. Since the thus-obtained tethered nucleotides can be used to label with fluorescent dyes , they are convenient building blocks for practical applications in DNA sequencing. Furthermore, we **synthesized** the N4-modified dideoxycytidine 5'-triphosphate dye derivs. with different lengths of linkers between the base residue and the dye. Base-specific nucleosides were well accepted by the DNA-polymerases and showed perfect termination quality.

IT **5381-98-6 15074-54-1**, 2-Chlorophenylphosphorodichloridate
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

RN 5381-98-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



RN 15074-54-1 HCAPLUS
CN Phosphorodichloridic acid, 2-chlorophenyl ester (CA INDEX NAME)



CC 33-10 (Carbohydrates)
Section cross-reference(s): 3, 6, 7

ST deoxyribonucleotide chain terminator DNA sequencing polymerase **prepn**; azidodeoxythymidine DNA sequencing fluorescent dye labeled linker **prepn**; deoxycytidine phosphate dye labeled substrate enzyme **prepn**

IT DNA sequence analysis
Fluorescent dyes
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT Enzymes, uses
RL: CAT (Catalyst use); USES (Uses)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

IT Deoxyribonucleotides
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)

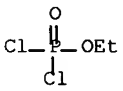
IT DNA
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(single-stranded; **preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
IT Genetic element
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(terminator; **preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
IT 251932-46-4P
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); BIOL (Biological study); PREP (Preparation)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
IT 9012-90-2, ThermoSequenase 9027-67-2, Terminal deoxynucleotidyl transferase
RL: CAT (Catalyst use); USES (Uses)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
IT 383-63-1 603-35-0D, Triphenylphosphine, polymer-bound
5381-98-6 5975-18-8, Bis(tributylammonium)pyrophosphate
15074-54-1, 2-Chlorophenylphosphorodichloridate
30516-87-1 65915-94-8 216965-96-7 252045-37-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
IT 5983-09-5P 56934-05-5P 130945-07-2P 188438-79-1P
251557-12-7P 251557-13-8P 251557-14-9P 251557-15-0P
251557-16-1P 251557-17-2P 251557-18-3P 251557-19-4P
251557-20-7P 251557-21-8P 251557-22-9P 251557-23-0P
251557-25-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and incorporation activity of 3'-sugar- and base-modified nucleotides as potent chain terminators in DNA sequencing using fluorescent dye labels)
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 12 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:462283 HCAPLUS Full-text
DOCUMENT NUMBER: 131:162533
TITLE: Total reorganization energy and its components in processes of one-electron oxidation of phosphorus compounds in acetonitrile
AUTHOR(S): Yanilkin, V. V.; Zverev, V. V.
CORPORATE SOURCE: A. E. Arbuzov Institute of Organic and Physical Chemistry, Kazan' Scientific Center of the Russian Academy of Sciences, Kazan', 420088, Russia
SOURCE: Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (**1999**), 48(4), 677-685
CODEN: RCBUEY; ISSN: 1066-5285
PUBLISHER: Consultants Bureau
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Jul 1999

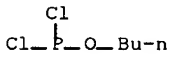
AB The ionization processes of phosphorus(III) and (IV) compds. oxidized in the potential range of 1.8-4.0 V vs. Ag/0.01 M AgNO3 in MeCN were studied by chronovoltammetry on a Pt ultramicroelectrode in acetonitrile and by photoelectron spectroscopy in the gas phase. A relationship between the half-wave potential (E1/2) and vertical ionization potential (IPv) E1/2 = 0.89IPv - 6.27 is fulfilled in a wide potential range from -0.37 to 3.98 V. The total reorganization energy of the system (1.45-2.50 V) and the energy of reorganization of the solvate shell (0.9-1.9 eV) were estimated

IT **1498-51-7 10496-13-6 157071-81-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(total reorganization energy and its components in processes of one-electron oxidation of phosphorus compds. in acetonitrile)

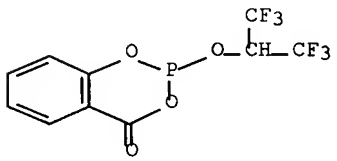
RN 1498-51-7 HCAPLUS
CN Phosphorodichloridic acid, ethyl ester (CA INDEX NAME)



RN 10496-13-6 HCAPLUS
CN Phosphorodichloridous acid, butyl ester (8CI, 9CI) (CA INDEX NAME)



RN 157071-81-3 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-[2,2,2-trifluoro-1-(trifluoromethyl)ethoxy]- (9CI) (CA INDEX NAME)



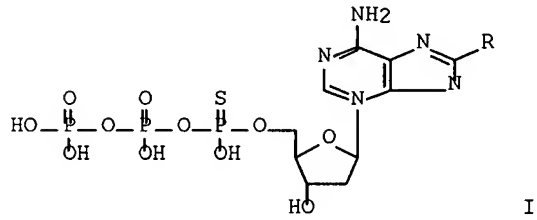
CC 72-2 (Electrochemistry)
Section cross-reference(s): 65

IT 60-29-7, Diethyl ether, reactions 67-56-1, Methanol, reactions 67-64-1, 2-Propanone, reactions 78-40-0 102-85-2, Tributoxyphosphine 121-45-9, Trimethoxyphosphine 126-73-8, Phosphoric acid tributyl ester, reactions 370-69-4 512-56-1 554-70-1, Triethylphosphine 603-35-0, Triphenylphosphine, reactions 765-40-2 791-28-6 797-70-6 822-39-9 829-85-6, Diphenylphosphine 868-85-9 998-40-3 **1498-51-7** 1641-40-3 2241-68-1 2729-11-5 3402-24-2 **10496-13-6** 14394-26-4 20570-25-6 36198-87-5 65611-17-8 66470-81-3 75956-77-3 104728-29-2 106054-01-7 141968-97-0 **157071-81-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(total reorganization energy and its components in processes of one-electron oxidation of phosphorus compds. in acetonitrile)

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L91 ANSWER 13 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:107598 HCAPLUS Full-text
DOCUMENT NUMBER: 120:107598
TITLE: **Synthesis** of 8-bromo- and 8-azido-2'-deoxyadenosine-5'-O-(1-thiotriphosphate)
AUTHOR(S): Ettner, Norbert; Haak, Ute; Niederweis, Michael; Hillen, Wolfgang
CORPORATE SOURCE: Inst. Mikrobiol. Biochem., Friedrich-Alexander Univ. Erlangen-Nuernberg, Erlangen, 8520, Germany
SOURCE: Nucleosides & Nucleotides (**1993**), 12(7), 757-71
CODEN: NUNUD5; ISSN: 0732-8311
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 05 Mar 1994
GI



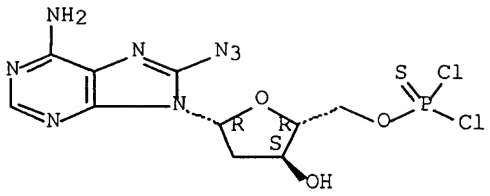
I

AB Treatment of 3'-O-methoxyacetylated 8-bromo-2'-deoxyadenosine with a two fold excess of salicyl phosphorochloridite and subsequent reaction with bis(tri-n-butylammonium) pyrophosphate and oxidation with sulfur followed by removal of the protecting group gives predominantly 8-chromo-2'-deoxyadenosine 5'-O-(1-thiotriphosphate) (I; R = Br) and minor amts. of the corresponding brominated monothiophosphate. Alternatively, the photoreactive dATP analog 8-azido-2'-deoxyadenosine-5'-O-(1-thiotriphosphate) (I; R = N3) (II) is obtained by phosphorylation of unprotected 8-azido-2'-deoxyadenosine with a 1.8 molar equivalent excess of thiophosphoryl chloride and bis(tri-n-butylammonium) pyrophosphate. A protection of the nucleobase 6-amino group is not required. The photoaffinity labeling reagent II was characterized by 31P-NMR and ion-spray mass spectroscopy and its photolysis upon long wavelength UV irradiation was studied. Both α-thio derivs. of 2'-deoxyadenosine triphosphates can be incorporated into plasmid DNA by T7 DNA polymerase. Thus, they can be used for interference studies of protein binding and for crosslinking with amino acids in protein-nucleic acid-complexes.

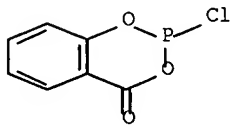
IT **152388-53-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in **preparation** of 8-azidodeoxyadenosine thiotriphosphate)

RN 152388-53-9 HCAPLUS
CN Adenosine, 8-azido-2'-deoxy-, 5'-phosphorodichloridothioate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromodeoxyadenosine thiotriphosphate)
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



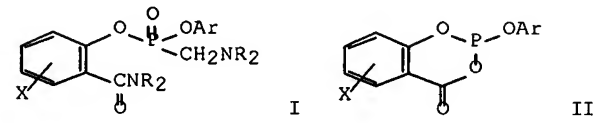
CC 33-9 (Carbohydrates)
Section cross-reference(s): 3, 34
ST azidodeoxyadenosine thiotriphosphate **prepn** incorporation plasmid DNA; nucleotide thiotriphosphate **prepn** incorporation plasmid DNA; polymerase incorporation plasmid DNA azidodeoxyadenosine thiotriphosphate
IT 131265-35-5P **152388-53-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in **preparation** of 8-azidodeoxyadenosine thiotriphosphate)
IT 17331-22-5P 152388-55-1P 152388-56-2P 152388-57-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(intermediate in **preparation** of 8-bromodeoxyadenosine thiotriphosphate)
IT 9012-90-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and incorporation of nucleotide thiotriphosphate into plasmid DNA by)
IT 152388-54-0P 152388-58-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and incorporation of, into plasmid DNA by T7 DNA polymerase)
IT 152388-52-8P 152956-11-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT 3982-91-0, Phosphorothioic trichloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-azidodeoxyadenosine thiotriphosphate)
IT 958-09-8, 2'-Deoxyadenosine
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromo- and 8-azidodeoxyadenosine thiotriphosphate)
IT **5381-99-7** 19500-95-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant, in **preparation** of 8-bromodeoxyadenosine thiotriphosphate)

L91 ANSWER 14 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:441020 HCAPLUS Full-text
DOCUMENT NUMBER: 113:41020
TITLE: Method for the **preparation** of carbamoylphenyl(aminomethyl)phosphates
INVENTOR(S): Bliznyuk, N. K.; Chvertkina, L. V.; Madzhara, G. A.; Kvasha, N. A.; Smirnova, S. B.; Chvertkin, B. Ya.
PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of Phytopathology, USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret. 1990, (10), 106.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1549957	A1	19900315	SU 1988-4429690 <--	19880524

PRIORITY APPLN. INFO.: SU 1988-4429690 <-- 19880524

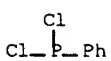
ED Entered STN: 03 Aug 1990
GI



I II

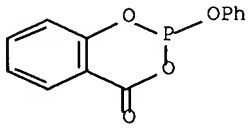
AB The title compds. [I; R = alkyl; R2N = piperidino, morpholino; X = H, alkyl, halo; Ar = (un)substituted Ph] were **prepared** by reaction of substituted methylenediamines with salicylic acid-phosphite addition **products** II in refluxing PhH. II were **prepared** by refluxing (substituted) salicylic acids with aryldichlorophosphites in PhH containing pyridine catalyst.

IT **644-97-3D**, Dichlorophenylphosphine, derivs.
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(cyclocondensation of, with salicylic acid derivs.)
RN 644-97-3 HCAPLUS
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



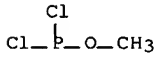
IT **2077-04-5DP**, derivs.
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and ring-opening aminomethylation of)
RN 2077-04-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-phenoxy- (8CI, 9CI) (CA INDEX NAME)



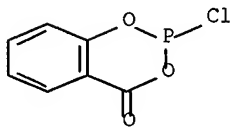
IC ICM C07F009-40
CC 29-7 (Organometallic and Organometalloidal Compounds)
IT **644-97-3D**, Dichlorophenylphosphine, derivs.
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(cyclocondensation of, with salicylic acid derivs.)
IT **2077-04-5DP**, derivs.
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and ring-opening aminomethylation of)
IT 128147-08-0DP, derivs.
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

L91 ANSWER 15 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1989:39289 HCAPLUS Full-text
DOCUMENT NUMBER: 110:39289
TITLE: **Synthesis** of oligonucleotide derivatives bearing amino and sulfhydryl groups on a polymer support. Introduction of spin, fluorescent and other labels
AUTHOR(S): Bashuk, O. S.; Zarytova, V. F.; Levina, A. S.
CORPORATE SOURCE: Novosib. Inst. Bioorg. Chem., Novosibirsk, USSR
SOURCE: Bioorganicheskaya Khimiya (**1988**), 14(5), 606-14
CODEN: BIKHD7; ISSN: 0132-3423
DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 04 Feb 1989
AB Reactions of mono- and dialkyl phosphites (H-phosphonates) were used to introduce amino and mercapto groups into oligonucleotides, which were **synthesized** by the solid-phase amidophosphite method. The oligonucleotide H phosphonates were obtained by phosphorylation with PCl3, salicyl chlorophosphite, or MeOPCl3. Residues of N-(2-hydroxyethyl)phenazinium and fluorescein were added to amino groups of the obtained derivs.; a spin-labeled derivative was obtained from the 5'-thiophosphate of decathymidylate.
IT **3279-26-3**, Methyl dichloro phosphite
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with nucleotides)
RN 3279-26-3 HCAPLUS
CN Phosphorodichloridous acid, methyl ester (8CI, 9CI) (CA INDEX NAME)



IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oligonucleotides)

RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



CC 33-9 (Carbohydrates)
IT Nucleotides, polymers
RL: SPN (Synthetic preparation); PREP (Preparation)
(oligo-, **preparation** of amino- and thiophosphate-containing, spin and fluorescent labeling of)
IT 118215-26-2DP, polymer-bound and protected
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and amidation by ethylenediamine)
IT 118215-27-3DP, polymer-bound and protected
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and aminolysis of)
IT 118229-95-1DP, polymer-bound and protected
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and elimination of trifluoroacetyl group from)
IT 118215-17-1P 118215-18-2P 118215-19-3DP, polymer-bound and protected
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and oxidation of)
IT 54503-70-7P 71425-51-9P 118215-16-0DP, polymer-bound and protected
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction with (hydroxyethyl)trifluoroacetamide)
IT 118215-28-4DP, polymer-bound and protected
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and sulfuration of)
IT 66191-12-6P 88770-29-0DP, polymer-bound 118215-20-6P
118215-21-7P 118215-22-8DP, polymer-bound 118215-24-0P
118215-25-1P 118215-29-5DP, polymer-bound and protected
118215-30-8P 118215-31-9P 118229-96-2P 118229-97-3P
118229-98-4P 118229-99-5P 118230-00-5P 118230-01-6P
118230-02-7P 118250-33-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT **3279-26-3**, Methyl dichloro phosphite
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with nucleotides)
IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with oligonucleotides)

L91 ANSWER 16 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:182222 HCAPLUS Full-text
DOCUMENT NUMBER: 108:182222
TITLE: Synergistic plant growth regulator compositions containing malonic acid derivatives
INVENTOR(S): See, Raymond Michael; Fritz, Charles David;

	Manning, David Treadway; Wheeler, Thomas Neil; Cooke, Anson Richard
PATENT ASSIGNEE(S):	Rhone-Poulenc Nederlands B. V., Neth.
SOURCE:	PCT Int. Appl., 234 pp.
	CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	2
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8705781	A2	19871008	WO 1987-US648	1987 0330
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WO 8705781	A3	19871203		
W: AU, BR, DK, FI, HU, JP, KR, MW, NO, SD, SU				
RW: AT, BE, CH, DE, FR, GB, IT, NL, SE				
US 5123951	A	19920623	US 1987-17150	1987 0304
			<--	
AU 8772371	A	19871020	AU 1987-72371	1987 0330
			<--	
AU 614488	B2	19910905		
JP 63503064	T	19881110	JP 1987-502284	1987 0330
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JP 2749578	B2	19980513		
HU 46519	A2	19881128	HU 1987-2058	1987 0330
			<--	
HU 201455	B	19901128		
AT 78976	T	19920815	AT 1987-902947	1987 0330
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NO 8704929	A	19880119	NO 1987-4929	1987 1126
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NO 176041	B	19941017		
NO 176041	C	19950125		
DK 8706235	A	19880126	DK 1987-6235	1987 1127
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DK 175682	B1	20050117		
RU 2088085	C1	19970827	RU 1987-4203732	1987 1127
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FI 8705279	A	19871130	FI 1987-5279	1987 1130
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FI 90189	B	19930930		
FI 90189	C	19940110		
PRIORITY APPLN. INFO.:			US 1986-846392 A	1986 0331

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US 1987-17150 A
1987
0304
<--
EP 1987-902947 A
1987
0330
<--
WO 1987-US648 A
1987
0330
<--

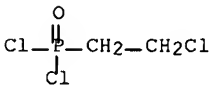
ED Entered STN: 28 May 1988

AB The title composition comprises an ethylene response- or an ethylene-type response-inducing agent and the malonic acid derivative R1Y1C(:Y5)CY3Y4C(:Y6)Y2R2 [R1, R2 = H, (un)substituted carbocyclyl, aryl or heterocyclyl, XR3, P(:Y7)(Y8R4)(Y9R5), Y10P(:Y7)(Y8R4)(Y9R5), C(Y8R4)(Y9R5), etc.; Y1, Y2 = (un)substituted heteroatom; Y3, R4 = H, (un)substituted heteroatom, substituted C, etc.; Y3Y4 = O, S, N2, etc.; Y3CY4 = ring system; Y5, Y6 = O, S; X = single or double bond, (un)substituted heteroatom, substituted C, etc.; R3 = (un)substituted carbocyclyl, aryl or heterocyclyl, substituted C or heteroatom, (un)substituted chain, etc.; Y7, Y10 = O, S; Y8, Y9 = O, S, amino, covalent single bond; R4, R5 = H, (un)substituted alkyl, alkenyl, alkynyl, Ph, etc.]. 4-Fluoroaniline was reacted with Et malonyl chloride in Et3N-containing THF, to give Et 3-[(4-fluorophenyl)amino]-3-oxopropanoate. A mixture of ethephon and Et 1-(2-methyl-4-bromophenyl)aminocarbonylcyclopropanecarboxyl ate (0.25 lb/acre each) caused 80% defoliation of snap bean, whereas the components by themselves were inactive.

IT **690-12-0 88169-35-1**
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(plant growth regulator, synergistic)

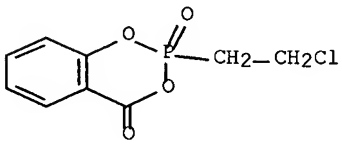
RN 690-12-0 HCAPLUS

CN Phosphonic dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 88169-35-1 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(2-chloroethyl)-, 2-oxide (9CI) (CA INDEX NAME)



IC ICM A01N057-24
ICS A01N057-22; A01N057-20; A01N057-08; A01N057-06; A01N057-04; A01N053-00; A01N041-04; A01N037-30; C07C103-36; C07C103-38

CC 5-3 (Agrochemical Bioregulators)
Section cross-reference(s): 25

IT **690-12-0** 999-82-6 5853-72-5 7582-45-8 16672-87-0
17378-30-2 23459-82-7 25431-72-5 25431-74-7 26271-37-4

27366-98-9 27366-99-0 53986-90-6 88169-33-9 88169-34-0
88169-35-1 88169-36-2 88169-37-3 88169-38-4
88169-39-5 114110-71-3 114110-73-5 114110-74-6 114110-75-7
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114110-80-4 114110-81-5 114110-82-6 114110-83-7
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114111-08-9 114111-09-0 114111-10-3 114111-12-5
114170-69-3 114233-40-8 114233-41-9 114233-42-0
114233-43-1 114233-44-2 114233-45-3 114233-46-4
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study); USES (Uses)
(plant growth regulator, synergistic)

IT 113137-31-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and chlorination of)

IT 113137-42-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and desilylation of)

IT 40924-27-4P, Diethyl methoxymalonate 56752-44-4P 106352-21-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and hydrolysis of)

IT 113137-43-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with Et chloroformate)

IT 3697-67-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with Me dichloroaniline)

IT 87545-71-9P 113137-14-7P 113137-25-0P 113137-32-9P
113137-33-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with aniline derivs.)

IT 114233-39-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with bromomethylaniline)

IT 4270-39-7P 6315-45-3P 10390-08-6P 15270-54-9P 15386-78-4P
15386-79-5P 15386-82-0P 15386-86-4P 15386-89-7P
15960-82-4P 17722-30-4P 53341-66-5P 58271-36-6P
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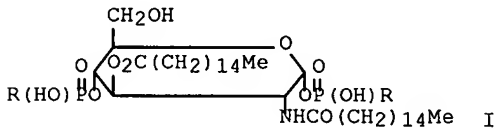
114233-31-7P 114233-32-8P 114233-33-9P 114233-34-0P
114233-35-1P 114233-36-2P 114233-37-3P 114233-38-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of, as component in plant growth regulator compns.)

L91 ANSWER 17 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:529534 HCAPLUS Full-text
DOCUMENT NUMBER: 109:129534
TITLE: **Synthesis** of diphosphorylated and diphosphonylated two Lipid A monosaccharide analogs via phosphite intermediates
AUTHOR(S): Westerduin, P.; Veeneman, G. H.; Van Boom, J. H.
CORPORATE SOURCE: Gorlaeus Lab., Leiden Univ., Leiden, 2300 RA, Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas (**1987**), 106(12), 601-6
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 109:129534
ED Entered STN: 14 Oct 1988
GI

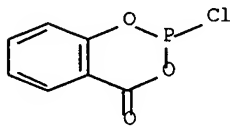


I

AB The **synthesis** of 2 Lipid A monosaccharide analogs, 3-O-palmitoyl-2-deoxy-2-palmitamido-α-D-glucopyranose 1,4-diphosphate (I; R = OH) and the resp. 1,4-bis(1H-phosphonate) (I; R= H) is described. The introduction of the phosphate functions was achieved via phosphatidylation of the anomeric and nonanomeric OH groups with the monofunctional phosphitylating reagents benzyl 2-cyanoethyl N,N-diethylphosphoramidite and salicyl phosphochloridite. Oxidation of the intermediate phosphite triester and subsequent removal of all the protective groups afforded the target mols. I.
IT **76101-30-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxypropionitrile)
RN 76101-30-9 HCAPLUS
CN Phosphorodichloridous acid, 2-cyanoethyl ester (6CI, 9CI) (CA INDEX NAME)

$Cl_2P—O—CH_2—CH_2—CN$

IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with palmitoyldeoxypalmitidoglucopyranose)
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



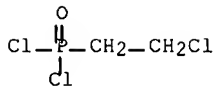
CC 33-7 (Carbohydrates)
ST lipid A monosaccharide analog **prepn**;
palmitoyldeoxypalmitamidoglucopyranose phosphate phosphonate;
glucopyranose palmitoyldeoxypalmitamido phosphate phosphonate
IT 78835-47-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and benzyloxymethylation of)
IT 116457-74-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and conversion of, to sodium salt)
IT 82755-00-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and deisopropylidenation of)
IT 116457-67-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** and glycosidic cleavage of)
IT 116457-77-3P 116480-20-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and hydrogenolysis of)
IT 116457-66-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and isomerization of)
IT 116457-68-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and phosphorylation or phosphonylation of)
IT 110914-51-7P 116457-70-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP
(Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with
palmitoyldeoxypalmitidoglucopyranose)
IT 116457-64-8P 116457-65-9P 116457-72-8P 116457-76-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT **76101-30-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydroxypropionitrile)
IT **5381-99-7**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with palmitoyldeoxypalmitidoglucopyranose)

L91 ANSWER 18 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1984:2196 HCAPLUS Full-text
DOCUMENT NUMBER: 100:2196
TITLE: Plant growth regulation methods
INVENTOR(S): Fritz, Charles D.; Evans, Wilbur E.; Cooke, Anson R.
PATENT ASSIGNEE(S): Union Carbide Corp., USA
SOURCE: U.S., 39 pp. Cont.-in-part of U.S. 4,374,661.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

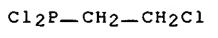
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4401454	A	19830830	US 1971-186461 <--	19711004
JP 58020927	B	19830426	JP 1968-37332 <--	19680531
US 4374661	A	19830222	US 1969-869386 <--	19691024
AT 7305554	A	19790815	AT 1973-5554 <--	19730625
AT 355604	B	19800310		

PRIORITY APPLN. INFO.:
US 1967-617860 A2 19670223 <--
US 1967-693698 A2 19671227 <--
US 1969-869386 A2 19691024 <--
AT 1968-1750 A 19680223 <--

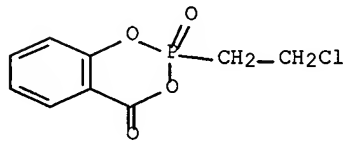
OTHER SOURCE(S): MARPAT 100:2196
ED Entered STN: 12 May 1984
AB Phosphonic acid derivs. are phytoregulators for a variety of plant species **producing** responses such as abscission of foliage, flowers, and fruit, hastening of fruit ripening and color development, prevention of lodging, and stimulation of germination and breaking of dormancy, etc. Thus, spray application of 2-chloroethylphosphonic acid [16672-87-0] to tomatoes induced abscission of flower buds and flowers. Rates of 50-300 ppm were most effective in abscissing unpollinated flowers, whereas rates of 600 and 1000 ppm abscised both pollinated and unpollinated flowers along with a temporary dwarfing of vegetative growth, and leaf epinasty.
IT **690-12-0P 691-51-0P 88169-35-1P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of, as phytoregulator)
RN 690-12-0 HCAPLUS
CN Phosphonic dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 691-51-0 HCAPLUS
CN Phosphonous dichloride, (2-chloroethyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)

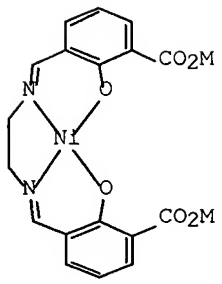


RN 88169-35-1 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(2-chloroethyl)-, 2-oxide (9CI) (CA INDEX NAME)

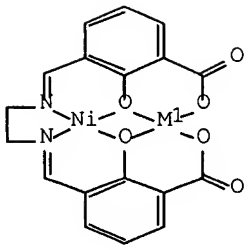


IC A01N057-00
INCL 071076000
CC 5-3 (Agrochemical Bioregulators)
IT **690-12-0P 691-51-0P** 5853-72-5P 6145-31-9P
6294-34-4P 7582-45-8P 17378-30-2P 23459-82-7P 25431-72-5P
25431-74-7P 26271-37-4P 27366-95-6P 27366-98-9P
27366-99-0P 29507-28-6P 53986-90-6P 88169-33-9P
88169-34-0P **88169-35-1P** 88169-36-2P 88169-37-3P
88169-38-4P 88169-39-5P 88169-40-8P 88185-24-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of, as phytoregulator)

L91 ANSWER 19 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:85721 HCAPLUS Full-text
DOCUMENT NUMBER: 96:85721
TITLE: Metallic complexes as ligands: Part II - Nickel(II) complex of the Schiff base derived from 3-formylsalicylic acid and ethylenediamine as ligand for titanium, zirconium, tin, phosphorus, and boron
AUTHOR(S): Dey, K.; Biswas, A. K.; Roy, A. K. Sinha
CORPORATE SOURCE: Dep. Chem., Univ. Kalyani, Kalyani, 741 235, India
SOURCE: Indian Journal of Chemistry, Section A: Inorganic, Physical, Theoretical & Analytical (**1981**), 20A(8), 848-51
CODEN: IJCADU; ISSN: 0376-4710
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
GI



I



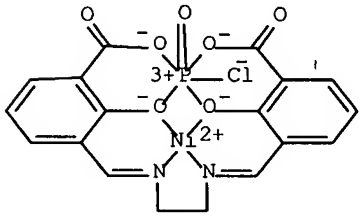
II

AB Ni complexes I (M = BPh2), II [M1 = Cp2Ti, Cp2Zr (Cp = cyclopentadienyl), Me2Sn, Ph2Sn, MeP, PhP, P(O)Cl] were **prepared** by lithiating or silylating I (M = H) to give I (M = Li, SiMe3) followed by treatment with Ph2BCl, M1Cl2RPCl2 (R = Me, Ph) or POCl3, resp.

IT **80695-21-2P 80764-22-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

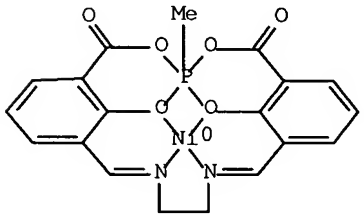
RN 80695-21-2 HCAPLUS

CN Nickel, (chlorooxophosphorus)[μ-[[3,3'-[1,2-ethanediylbis(nitrilomethylidyne)]bis[2-hydroxybenzoato]](4-)]]-(9CI) (CA INDEX NAME)



RN 80764-22-3 HCAPLUS

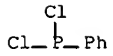
CN Nickel, (7,8-dihydro-16-methyl-16H-16,1:16,14-bis(epoxymethano)dibenzo[d,l][1,3,7,10,2]dioxadiazaphosphacyclotridecine-19,21-dione-N6,N9,O15,O17)- (9CI) (CA INDEX NAME)



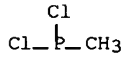
IT **644-97-3 676-83-5**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with nickel Schiff base)

RN 644-97-3 HCAPLUS

CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)

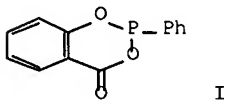


RN 676-83-5 HCAPLUS
CN Phosphonous dichloride, P-methyl- (CA INDEX NAME)



CC 29-13 (Organometallic and Organometalloidal Compounds)
IT 80695-22-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction of, with chloro compds.)
IT 80695-19-8P 80695-20-1P **80695-21-2P** 80711-06-4P
80711-10-0P 80733-45-5P 80764-21-2P **80764-22-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT **644-97-3 676-83-5** 753-73-1 1135-99-5
1271-19-8 1291-32-3 3677-81-4 10025-87-3
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with nickel Schiff base)

L91 ANSWER 20 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1979:421190 HCAPLUS Full-text
DOCUMENT NUMBER: 91:21190
TITLE: Polymerization via zwitterion. 21. Alternating copolymerizations of cyclic acyl phosphonite and phosphite with p-benzoquinones
AUTHOR(S): Saegusa, Takeo; Kobayashi, Takatoshi; Chow, Tak-Yuen; Kobayashi, Shiro
CORPORATE SOURCE: Fac. Eng., Kyoto Univ., Kyoto, Japan
SOURCE: Macromolecules (**1979**), 12(3), 533-5
CODEN: MAMOBX; ISSN: 0024-9297
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
GI

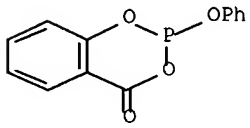


I

AB 2-Phenyl-4-oxo-5,6-benzo-1,3,2-dioxaphosphorane (I) [66737-42-6] and 2-phenoxy-4-oxo-5,6-benzo-1,3,2-dioxaphosphorane [**2077-04-5**] were **prepared** and polymerized as nucleophilic monomers with p-benzoquinone [106-51-4] or its derivs. as electrophilic monomers without added catalysts to give 1:1 alternating copolymers consisting of ester groups and phosphonate or phosphate groups in the main chain. The first step in the reaction **produced** a zwitterion of the phosphonium and phenoxide groups which was an

important intermediate in both the initiation and propagation steps. Spectrometry showed the copolymers to contain phosphonate ester groups.

IT **2077-04-5**
RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, with benzoquinone, mechanism of alternating)
RN 2077-04-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-phenoxy- (8CI, 9CI) (CA INDEX NAME)

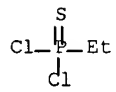


IT **644-97-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with salicylic acid)
RN 644-97-3 HCAPLUS
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)

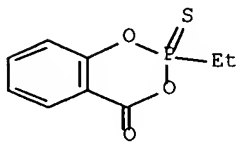
CC 35-4 (Synthetic High Polymers)
IT **2077-04-5** 66737-42-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, with benzoquinone, mechanism of alternating)
IT 101-02-0 **644-97-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with salicylic acid)

L91 ANSWER 21 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1980:33438 HCAPLUS Full-text
DOCUMENT NUMBER: 92:33438
TITLE: Determination of bifunctional compounds. VII. Ethylphosphonothioic dichloride as a selective reagent for the trace analysis of bifunctional compounds by gas chromatography with phosphorus-specific detection
AUTHOR(S): Poole, C. F.; Singhawangcha, S.; Hu, L. E. Chen; Zlatkis, A.
CORPORATE SOURCE: Dep. Chem., Univ. Houston, Houston, TX, 77004, USA
SOURCE: Journal of Chromatography (**1979**), 178(2), 495-503
CODEN: JOCRAM; ISSN: 0021-9673
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
AB Ethylphosphonothioic dichloride reacts selectively with bifunctional compds. containing OH, NH2, and COOH groups to **form** derivs. which are stable to gas chromatog. These derivs. can be determined at the low pg level with the N-P detector or with the flame photometric detector. The cyclic ethylphosphonothioic derivs. **produce** characteristic mass spectra with prominent mol. ions. The derivs. are suitable for identification purposes by gas chromatog.-mass spectrometry and the prominent ion [M-C2H5S]+ should be useful for trace anal. by single ion monitoring.
IT **993-43-1**

RL: ANST (Analytical study)
(as derivatization reagent for gas chromatog. of bifunctional compds.)
RN 993-43-1 HCAPLUS
CN Phosphonothioic dichloride, P-ethyl- (CA INDEX NAME)

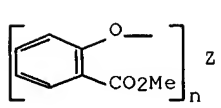


IT **72399-14-5**
RL: PRP (Properties); ANST (Analytical study)
(mass spectra of)
RN 72399-14-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-ethyl-, 2-sulfide (9CI) (CA INDEX NAME)

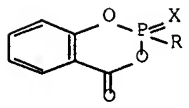


CC 80-6 (Organic Analytical Chemistry)
IT **993-43-1**
RL: ANST (Analytical study)
(as derivatization reagent for gas chromatog. of bifunctional compds.)
IT 4602-02-2 60990-02-5 62824-72-0 72399-09-8 72399-10-1
72399-11-2 72399-12-3 72399-13-4 **72399-14-5**
72399-15-6 72399-16-7 72399-17-8
RL: PRP (Properties); ANST (Analytical study)
(mass spectra of)

L91 ANSWER 22 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:443604 HCAPLUS Full-text
DOCUMENT NUMBER: 89:43604
TITLE: **Synthesis** of different esters of phosphonic and amidophosphoric acids with hydroxybenzoic acids
AUTHOR(S): Vakhidova, V. V.; Makhamatkhanov, M. M.; Bakhtiyarova, F. A.; Yuldasheva, Kh. E.; Maksudov, N. Kh.; Akbarov, A.
CORPORATE SOURCE: Tashk. Inst. Inzh. Irrig. Mekh. Sel'sk. Khoz., Tashkent, USSR
SOURCE: Uzbekskii Khimicheskii Zhurnal (**1977**), (6), 66-9
CODEN: UZKZAC; ISSN: 0042-1707
DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 12 May 1984
GI



I



II

AB Hydroxybenzoic acid phosphorus esters I (Z = P, PO, PS, n = 3; Z = P(O)CH2Cl, P(S)CH2Cl, P(S)Ph, P(O)CH2CH2Cl, n = 2) (8 compds., yield 45-65%), II (R = CH2Cl, X = O, S; R = Ph, NHPh, NHC6H4Me-p, NHC6H4CO2Et-p, NHC6H4NO2-p, NHC6H4OMe-o, X = -) (8 compds, yield 63 - 75%) were **prepared** Thus, heating o-HOC6H4CO2H with RP(X)Cl2 at 160° gave II.

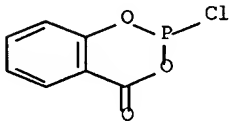
IT **5381-99-7P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(**preparation** and reaction with amine)

RN 5381-99-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



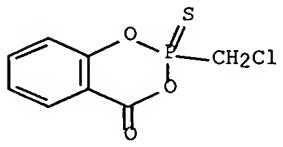
IT **66737-41-5P 66737-43-7P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(**preparation** of)

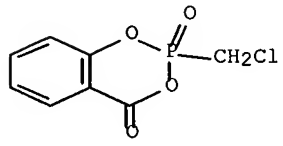
RN 66737-41-5 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-sulfide (9CI) (CA INDEX NAME)



RN 66737-43-7 HCAPLUS

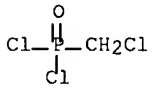
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-oxide (9CI) (CA INDEX NAME)



IT **1983-26-2**

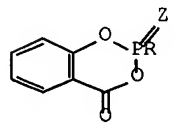
RL: **RCT (Reactant)**; RACT (Reactant or reagent)

(reaction of, with salicylic acid)
RN 1983-26-2 HCAPLUS
CN Phosphonic dichloride, P-(chloromethyl)- (CA INDEX NAME)



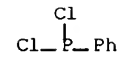
CC 29-7 (Organometallic and Organometalloidal Compounds)
IT **5381-99-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and reaction with amine)
IT 4004-52-8P 61293-69-4P 61293-70-7P 61293-71-8P 61293-72-9P
61293-73-0P 66737-34-6P 66737-35-7P 66737-36-8P
66737-37-9P 66737-38-0P 66737-39-1P 66737-40-4P
66737-41-5P 66737-42-6P **66737-43-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT **1983-26-2** 14939-40-3 15176-84-8
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reaction of, with salicylic acid)

L91 ANSWER 23 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1978:529205 HCAPLUS Full-text
DOCUMENT NUMBER: 89:129205
TITLE: Cyclic esters of some phosphonic and amidophosphoric acids with salicylic acid
AUTHOR(S): Makhamatkhanov, M. M.; Vakhidova, V. V.; Bakhtiyarova, F. A.; Yuldasheva, Kh. E.; Maksudov, N. Kh.
CORPORATE SOURCE: Tashkent. Inst. Inzh. Irrig. Mekh. Sel'sk. Khoz., Tashkent, USSR
SOURCE: Deposited Doc. (**1976**), VINITI 2152-76, 6 pp. Avail.: VINITI
DOCUMENT TYPE: Report
LANGUAGE: Russian
ED Entered STN: 12 May 1984
GI

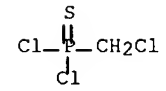


II

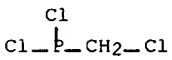
AB O-HOC6H4CO2H (I) cyclized with RP(Z)Cl2 (R = Ph, Z = :; R = ClCH2, Z = O, S) at 160° to give 70-5% cyclic esters II. Cyclization of I with PCl3 gave 80% II (R = Cl, Z = :), which reacted with R1NH2(R1 = Ph, 4-tolyl, 2-anisyl, 4-EtO2CC6H4, 2-O2NC6H4) in C6H6 to give the corresponding II (R = NHR1, Z = :) in 63-75% yield.
IT **644-97-3 1983-27-3 2155-78-4**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(cyclization of, with salicylic acid)
RN 644-97-3 HCAPLUS
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



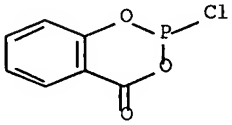
RN 1983-27-3 HCAPLUS
CN Phosphonothioic dichloride, (chloromethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



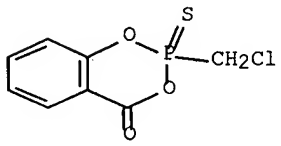
RN 2155-78-4 HCAPLUS
CN Phosphonous dichloride, (chloromethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **5381-99-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and amination of)
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)

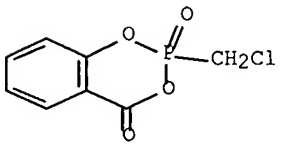


IT **66737-41-5P 66737-43-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
RN 66737-41-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-sulfide (9CI) (CA INDEX NAME)



RN 66737-43-7 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-(chloromethyl)-, 2-oxide (9CI) (CA INDEX NAME)



CC 25-18 (Noncondensed Aromatic Compounds)
Section cross-reference(s): 29

IT Ring closure and **formation**
(of salicylic acid with phosphorus trichloride and with phosphinic chlorides)

IT **644-97-3 1983-27-3 2155-78-4**
7719-12-2
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(cyclization of, with salicylic acid)

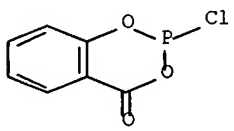
IT **5381-99-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**preparation** and amination of)

IT 61293-69-4P 61293-70-7P 61293-71-8P 61293-72-9P
61293-73-0P **66737-41-5P** 66737-42-6P
66737-43-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

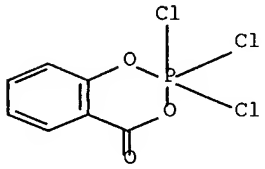
L91 ANSWER 24 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1974:82005 HCAPLUS Full-text
DOCUMENT NUMBER: 80:82005
TITLE: **Synthesis** of acyl chlorides and bromides from phosphosalicyclic acid halides
AUTHOR(S): Hanuise, J.; Smolders, R. R.; Voglet, N.; Wollast, P.
CORPORATE SOURCE: Serv. Chim. Org., Inst. Ind. Ferment., Brussels, Belg.
SOURCE: Ingenieur Chimiste (Brussels) (**1973**), 55(267-8), 3-6
CODEN: INCIAB; ISSN: 0020-1162
DOCUMENT TYPE: Journal
LANGUAGE: French
ED Entered STN: 12 May 1984
AB The salicyloyl chloride (I) converts alkanoic acids, BzOH, or p-MeC6H4SO3H to their acid chlorides in 60-97% yields. Similarly, II (**prepared** from Br and III) reacts with BzOH, Me3CCO2H, or Me(CH2)4CO2H to give 64-87% yields of the acid bromides, and also some acid chlorides.

IT **5381-99-7P 6314-18-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

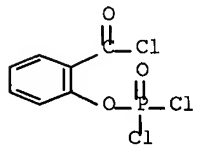
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



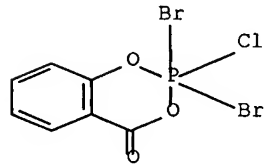
RN 6314-18-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2,2,2-trichloro-2,2-dihydro- (9CI) (CA INDEX NAME)



IT **6099-41-8**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reagent, for acyl halide **preparation**)
RN 6099-41-8 HCAPLUS
CN Phosphorodichloridic acid, 2-(chlorocarbonyl)phenyl ester (9CI) (CA INDEX NAME)



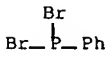
IT **51499-40-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent, for **preparation** of acyl bromides)
RN 51499-40-2 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2,2-dibromo-2-chloro-2,2-dihydro- (9CI) (CA INDEX NAME)



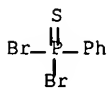
CC 23-17 (Aliphatic Compounds)
Section cross-reference(s): 25
IT Acid bromides
Acid chlorides
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of, reagent for)
IT 142-62-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid bromide **preparation** from, reagent for)
IT 64-19-7, reactions 75-96-7 76-03-9, reactions 79-09-4, reactions 104-15-4, reactions 107-92-6, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid chloride **formation** from, reagent for)

IT 65-85-0, reactions 75-98-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(acid halides **preparation** from, reagents for)
IT 75-36-5P 76-02-8P 79-03-8P 98-59-9P 98-88-4P 141-75-3P
618-32-6P 3282-30-2P **5381-99-7P 6314-18-7P**
27644-18-4P 34718-47-3P 51499-41-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
IT **6099-41-8**
RL: **RCT (Reactant)**; RACT (Reactant or reagent)
(reagent, for acyl halide **preparation**)
IT **51499-40-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent, for **preparation** of acyl bromides)

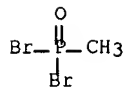
L91 ANSWER 25 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1972:501760 HCAPLUS Full-text
DOCUMENT NUMBER: 77:101760
TITLE: **Preparation** of phosphorus(III) and phosphorus(V) acid bromides
AUTHOR(S): Arbuzov, B. A.; Krupnov, V. K.; Vizel, A. O.
CORPORATE SOURCE: Inst. Org. Fiz. Khim. im. Arbuzova, Kazan, USSR
SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (**1972**), (5), 1193-4
CODEN: IASKA6; ISSN: 0002-3353
DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 12 May 1984
AB PhPCl2 and PBr3 gave PCl3 and 82% PhPBr2; Bu2NPCl2 gave 78% Bu2NPBr2; and (o-HOC6H4O)PClOH gave the Br analog. MePOCl2 gave 89% MePOBr2 and PhPSCl2 gave 89% PhPSBr2. The best temperature for the reaction was 170-90°.
IT **1073-47-8P 6231-02-3P 19430-64-9P**
37912-73-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)
RN 1073-47-8 HCAPLUS
CN Phosphonous dibromide, phenyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



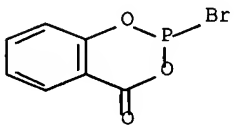
RN 6231-02-3 HCAPLUS
CN Phosphonothioic dibromide, phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 19430-64-9 HCAPLUS
CN Phosphonic dibromide, methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

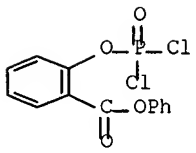


RN 37912-73-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- (9CI) (CA INDEX NAME)



CC 29-7 (Organometallic and Organometalloidal Compounds)
IT **1073-47-8P 6231-02-3P 19430-64-9P**
37912-72-4P **37912-73-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(**preparation** of)

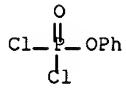
L91 ANSWER 26 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1966:35532 HCAPLUS Full-text
DOCUMENT NUMBER: 64:35532
ORIGINAL REFERENCE NO.: 64:6536b-e
TITLE: Structure of **products** from reactions of phosphorus pentachloride with phenyl salicylate and 2-hydroxybenzophenone. Related compounds. 31P N.M.R. and chemical studies
AUTHOR(S): Pinkus, A. G.; Waldrep, P. G.; Ma, S. Y.
CORPORATE SOURCE: Baylor Univ., Waco, TX
SOURCE: Journal of Heterocyclic Chemistry (**1965**), 2(4), 357-65
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 64:35532
ED Entered STN: 22 Apr 2001
GI For diagram(s), see printed CA Issue.
AB The compds. obtained from the reactions of Ph salicylate and 2-hydroxybenzophenone with PCl5 have been shown to have structures I and II, resp., rather than alternative heterocyclic structures on the basis of the comparison of the 31P chemical shifts with appropriate reference compds. and addnl. chemical evidence. I reacts with 2 equivs. PhOH in the presence of 2 equivs. Et3N to **form** mainly III (substitution on P). III is confirmed via 31P N.M.R. and ir spectra and the fact that partial hydrolysis **forms**. IV is obtained from the reaction of V with PhOH (only substitution possible). A mechanism with initial reaction of PCl5 (as tetrachlorophosphonium ion) on the phenolic hydroxyl is postulated on the basis of the available evidence. The 31P chemical shifts for VI and VII confirm these structures as heterocyclic in accord with previous chemical evidence. VI is of historical importance as one of the first 3 cyclic structures ever published in the classical paper in which Couper announced his structural theory of organic chemistry.
IT **5382-01-4**
(Derived from data in the 7th Collective Formula Index (1962-1966))
RN 5382-01-4 HCAPLUS
CN Salicylic acid, phenyl ester, phosphorodichloridate (7CI, 8CI) (CA INDEX NAME)



IT **770-12-7**, Phenyl phosphorodichloridate **5381-95-3**
, o-Cresol, α,α-dichloro-α-phenoxy-,
phosphorodichloridate **5381-96-4**, o-Cresol,
α,α-dichloro-α-phenyl-, phosphorodichloridate
5381-98-6, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-,
2-oxide **5381-99-7**, 4H-1,3,2-Benzodioxaphosphorin-4-one,
2-chloro-
(nuclear magnetic resonance of)

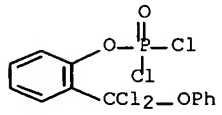
RN 770-12-7 HCAPLUS

CN Phosphorodichloridic acid, phenyl ester (CA INDEX NAME)



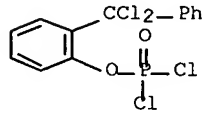
RN 5381-95-3 HCAPLUS

CN Phosphorodichloridic acid, 2-(dichlorophenoxymethyl)phenyl ester (9CI) (CA INDEX NAME)



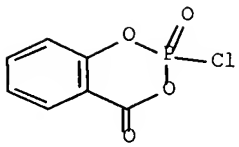
RN 5381-96-4 HCAPLUS

CN Phosphorodichloridic acid, 2-(dichlorophenylmethyl)phenyl ester (9CI) (CA INDEX NAME)

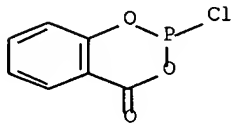


RN 5381-98-6 HCAPLUS

CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



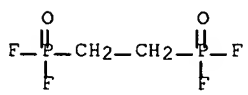
CC 35 (Noncondensed Aromatic Compounds)
IT 93-46-9 **5382-01-4** 5991-10-6 13929-83-4
(Derived from data in the 7th Collective Formula Index (1962-1966))
IT 115-86-6, Triphenyl phosphate **770-12-7**, Phenyl phosphorodichloridate 2007-97-8, 1,3,2-Benzodioxaphosphole, 2,2,2-trichloro-2,2-dihydro- 2524-64-3, Phenyl phosphorochloridate, (PhO)2ClPO 2524-64-3, Phenyl phosphorochloridite 4850-55-9, 1,3,2-Dioxaphosphole, 2,2-dihydro-2,2,2-trimethoxy-4,5-diphenyl- **5381-95-3**, o-Cresol, α,α-dichloro-α-phenoxy-, phosphorodichloridate **5381-96-4**, o-Cresol, α,α-dichloro-α-phenyl-, phosphorodichloridate 5381-97-5, o-Cresol, α,α-dichloro-α-phenoxy-, diphenyl phosphate **5381-98-6**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide **5381-99-7**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- 5382-00-3, Phosphorochloridous acid, diphenyl ester
(nuclear magnetic resonance of)
IT 2524-64-3P, Phosphorochloridic acid, diphenyl ester
RL: PREP (Preparation)
(**preparation** of)

L91 ANSWER 27 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:481907 HCAPLUS Full-text
DOCUMENT NUMBER: 59:81907
ORIGINAL REFERENCE NO.: 59:15162f-h,15163a-d
TITLE: Phosphorus-fluorine chemistry. VII. **Synthesis** and coordination chemistry of the fluorophosphites
AUTHOR(S): Schmutzler, Reinhard
CORPORATE SOURCE: E. I. du Pont de Nemours and Co., Inc., Wilmington, DE
SOURCE: Chemische Berichte (**1963**), 96(9), 2435-50
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
ED Entered STN: 22 Apr 2001
GI For diagram(s), see printed CA Issue.
AB cf. CA 58, 11393g, 12152b. A series of fluorophosphites (RO)nPFa3-n (R = a univalent hydrocarbon group) (n = 1 or 2) and R'(OPF2)2 (R' = a bivalent hydrocarbon group) was **prepared** by halogen exchange from the corresponding Cl analogs. The reaction of these

fluorophosphites with Ni(CO4) (I), cycloheptatrienemolybdenum tricarbonyl (II), or Mo(CO)6 (III) led to tetrasubstitution **products** of Ni0 and Mo0(CO)3 complexes of considerable stability. The reaction of I with (CH2OPF2)2 (IV) and p-C6H4(OPF2)2 (V) yielded coordination polymers with Ni0. The properties of the new coordination compds. are discussed, p-C6H4(OPCl2)2 (100 g.) heated slowly under a stream of N to a melt, treated during 1 hr. with 85 g. SbF3, kept at 50-60°, and distilled yielded 70 g. V, b12 59°, n2D3 1.4488. Similarly were **prepared** the following compds. (% yield, b.p./mm., nD/t°, reaction time in hrs., reaction temperature, and mole amts. chlorophosphite analog and SbF3 used): PrOPF2 (VI), 81, 44.5°/760, 1.3400/20, 2.5, 50°, 0.6, 0.5; BuOPF2, 88, 75°/760, 1.3580/20, 0.5 and 2, 40-50° and 75°, 0.3, 0.3; CH2:CHCH2OPF2, 83 5, 42°/760, -, 1 and 2, 30 and 45°, 0.8, 0.73; PhOPF2 (VII), 86.5, 58°/60, 1.4575/27, 1 and 1, 50-60 and 100°, 1, 0.95; ethylene fluorophosphite, 85, 48°/170, 1.4003/23.5, 3, 40°, 0.26, 0.13; 2-fluoro-1,3,2-benzodioxaphosphole (VIII), 89, 36.5°/6, 1.5092/25, 2, 50 100°, 0.3, 0.15; IV, 85, 50°/180, 1.3523/26, 1, 50-60°, 0.3, 0.475. Cl analog (0.8 mole) of VIII and 1.5 mole NaF in 200 cc. tetramethylene sulfone, heated 2.5 hrs. at 80°, yielded 71.5% VIII, b8 38°, n27D 1.5080. IX (0.8 mole), 250 g. KSO2F, and 250 cc. C6H6 heated 12 hrs. at 80° gave 17% F analog of IX, b0.15-0.2 44-7°, n27D 1.5390. VI (50.9 g.) treated dropwise with stirring under N with 11.9 g. I, stirred 20 hrs. below 50°, cooled to 0°, heated 5 hrs. at 110° in an autoclave, cooled to -80°, vented, and distilled yielded 38.0 g. Ni.4VI, b0.5 140.5-43°, n25.5D 1.4321, magnetic moment, μeff., 0.38 Bohr magnetons. Ni.4PhOPCl2 (12.6 g.), m. 107-8°, in 130 cc. C6H6 containing 30 g. powdered KSO2F, stirred 6 hrs. under N, filtered hot, and evaporated gave Ni.4VI. VII (41.0 g.) treated dropwise under N with 8.6 g. I, stirred 16 hrs., heated 1 hr. at 90°, 1 hr. at 120°, and then to 150°, and the mixture pumped at room temperature yielded 60.4 g. Ni.4VII, b0.5, 60°, n25D 1.5412, μeff. 0.27 Bohr magnetons. I (8.5 g.) added dropwise under N to 47.5 g. VIII and heated gradually during 3 hrs. to 130° yielded 33.5 g. Ni.4VIII, leaflets, m. 129-30° (C6H6). I (6.85 g.) added dropwise with stirring under N to 24.2 g. IV, stirred 20 hrs. at room temperature, heated gradually, treated with an addnl. 9.9 g. IV, kept 20 hrs. at 80°, cooled, powdered, and washed with MeOH and petr. ether yielded (Ni.2IV)n which turns slightly yellow on heating to 220° but does not melt; it is insol. in all common organic solvents. I (6 g.) added dropwise to 21 g. V, stirred 20 hrs. at 20°, heated during 3 hrs. to 80°, kept 10 hrs. at 80-100°, cooled, powdered, and dried 20 hrs. at 80°/0.1 mm. gave (Ni.2V)n, insol. in organic solvents; it turns slightly dark on heating to 280°, but does not decompose or melt. I (11.9 g.) treated dropwise under a stream of N with 12.3 g. V, stirred 20 hrs. at room temperature, treated again with 8.5 g. I, stirred 8 hrs. at 50°, and evaporated yielded the latex-like [Ni(CO)2.V]n. II (2.7 g.) treated under N below 40° with 12.8 g. VI, stirred 0.5 hr., pumped at 30°/<1 mm., and extracted with petr. ether, and the extract worked up gave 3.0 g. Mo(CO)3.3VI, b0.05 125°.

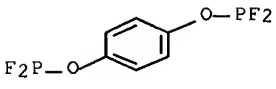
II (2.7 g.) with 14.3 g. VII yielded 3.9 g. Mo(CO)3.3VII, m. 47° (hexane at -80°). II (2.7 g.) with 15.8 g. VIII gave 4.0 g. Mo(CO)3.3VIII, m. 89.5-91° (hexane). III (26.4 g.) and 76.8 g. VI cooled under N to -190°, evacuated to 0.5 mm., heated 4 hrs. to 120°, cooled to -80°, vented, cooled to -190°, evacuated, heated 12 hrs. at 180°, vented again, and distilled gave the following fractions: (1) 3.8 g., b0.2 110-30°, n25D 1.4522; (2) 5.8 g., b0.2 130-45°, n25D 1.4740; (3) 5.0 g., b0.2 145-50°, n25D 1.4780; (4) 41.0 g., b0.25 145-60°, n25D 1.4780, and left a substantial black residue; the combined fractions 3 and 4 fractionated yielded 16.0 g. Mo(CO)33VIa.

IT **871-34-1**
(Derived from data in the 7th Collective Formula Index (1962-1966))
RN 871-34-1 HCAPLUS
CN Phosphonic difluoride, 1,2-ethanediylbis- (9CI) (CA INDEX NAME)

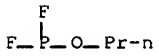


IT **830-44-4**, p-Phenylene phosphorodifluoridite
(Ni complexes, polymers)
RN 830-44-4 HCAPLUS
CN Phosphorodifluoridous acid, 1,4-phenylene ester (9CI) (CA INDEX

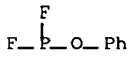
NAME)



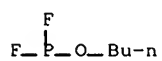
IT **3964-95-2**, Propyl phosphorodifluoridite **3965-01-3**
, Phenyl phosphorodifluoridite
(metal complexes)
RN 3964-95-2 HCAPLUS
CN Phosphorodifluoridous acid, propyl ester (8CI, 9CI) (CA INDEX NAME)



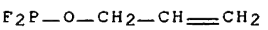
RN 3965-01-3 HCAPLUS
CN Phosphorodifluoridous acid, phenyl ester (8CI, 9CI) (CA INDEX NAME)



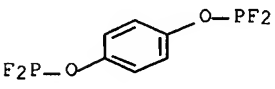
IT **693-00-5P**, Butyl phosphorodifluoridite **820-61-1P**
, Allyl phosphorodifluoridite, (C3H5O)PF2 **830-44-4P**,
p-Phenylene phosphorodifluoridite **1583-55-7P**,
4H-1,2,3-Benzodioxaphosphorin-4-one, 2-fluoro- **3964-95-2P**
, Propyl phosphorodifluoridite **3965-00-2P**, Ethylene
phosphorodifluoridite, F2P(OC2H4O)PF2 **3965-01-3P**, Phenyl
phosphorodifluoridite **15406-89-0P**, Molybdenum,
tricarbonyltris(phenyl phosphorodifluoridite)- **15612-38-1P**
, Molybdenum, tricarbonyltris(propyl phosphorodifluoridite)-
15693-97-7P, Nickel, tetrakis(propyl
phosphorodifluoridite)- **15977-41-0P**, Nickel,
tetrakis(phenyl phosphorodifluoridite)-
RL: PREP (Preparation)
(**preparation** of)
RN 693-00-5 HCAPLUS
CN Phosphorodifluoridous acid, butyl ester (8CI, 9CI) (CA INDEX NAME)



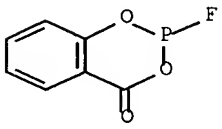
RN 820-61-1 HCAPLUS
CN Phosphorodifluoridic acid, 2-propenyl ester (9CI) (CA INDEX NAME)



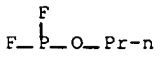
RN 830-44-4 HCAPLUS
CN Phosphorodifluoridous acid, 1,4-phenylene ester (9CI) (CA INDEX NAME)



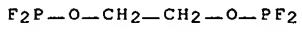
RN 1583-55-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-fluoro- (9CI) (CA INDEX NAME)



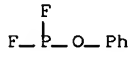
RN 3964-95-2 HCAPLUS
CN Phosphorodifluoridous acid, propyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3965-00-2 HCAPLUS
CN Phosphorodifluoridous acid, ethylene ester (8CI) (CA INDEX NAME)

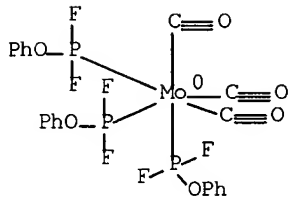


RN 3965-01-3 HCAPLUS
CN Phosphorodifluoridous acid, phenyl ester (8CI, 9CI) (CA INDEX NAME)

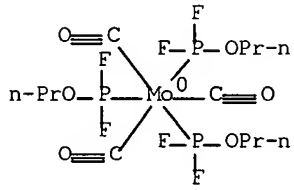


RN 15406-89-0 HCAPLUS
CN Molybdenum, tricarbonyltris(phenyl phosphorodifluoridite-κP)-

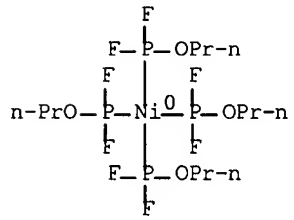
(9CI) (CA INDEX NAME)



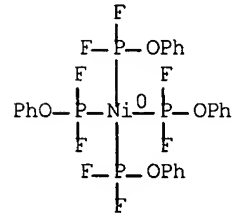
RN 15612-38-1 HCAPLUS
CN Molybdenum, tricarbonyltris(propyl phosphorodifluoridite-κP)-
(9CI) (CA INDEX NAME)



RN 15693-97-7 HCAPLUS
CN Nickel, tetrakis(propyl phosphorodifluoridite-κP)- (9CI)
(CA INDEX NAME)



RN 15977-41-0 HCAPLUS
CN Nickel, tetrakis(phenyl phosphorodifluoridite-κP)-, (T-4)-
(9CI) (CA INDEX NAME)



CC 33 (Aliphatic Compounds)
IT **871-34-1**
(Derived from data in the 7th Collective Formula Index (1962-1966))
IT **830-44-4**, p-Phenylene phosphorodifluoridite
(Ni complexes, polymers)
IT 1526-24-5, o-Phenylene phosphorofluoridite, (C6H4O2)FP **3964-95-2**, Propyl phosphorodifluoridite **3965-01-3**, Phenyl phosphorodifluoridite
(metal complexes)
IT **693-00-5P**, Butyl phosphorodifluoridite 765-40-2P, Ethylene phosphorofluoridite, (C2H4O2)PF 765-40-2P, 1,3,2-Dioxaphospholane, 2-fluoro- **820-61-1P**, Allyl phosphorodifluoridite, (C3H5O)PF2 **830-44-4P**, p-Phenylene phosphorodifluoridite 1526-24-5P, o-Phenylene phosphorofluoridite, (C6H4O2)FP **1583-55-7P**, 4H-1,2,3-Benzodioxaphosphorin-4-one, 2-fluoro- **1583-55-7P**, Phosphorofluoridous acid, ester with salicylic acid, cyclic anhydride **3964-95-2P**, Propyl phosphorodifluoridite **3965-00-2P**, Ethylene phosphorodifluoridite, F2P(OC2H4O)PF2 **3965-01-3P**, Phenyl phosphorodifluoridite **15406-89-0P**, Molybdenum, tricarbonyltris(phenyl phosphorodifluoridite)- 15530-43-5P, Molybdenum, tricarbonyltris(o-phenylene phosphorofluoridite)- 15609-54-8P, Nickel, tetrakis(o-phenylene phosphorofluoridite)- **15612-38-1P**, Molybdenum, tricarbonyltris(propyl phosphorodifluoridite)- **15693-97-7P**, Nickel, tetrakis(propyl phosphorodifluoridite)- **15977-41-0P**, Nickel, tetrakis(phenyl phosphorodifluoridite)-
RL: PREP (Preparation)
(**preparation** of)

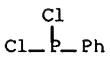
L91 ANSWER 28 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1962:436466 HCAPLUS Full-text
DOCUMENT NUMBER: 57:36466
ORIGINAL REFERENCE NO.: 57:7311d-g,7312a-c
TITLE: Thiophosphonates
INVENTOR(S): Schrader, Gerhard
PATENT ASSIGNEE(S): Farbenfabriken Bayer A.-G.
SOURCE: 51 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 608802		19620404	BE <--	
DE 1150387			DE	
GB 967505			GB	
US 3209020		19650928	US 1961-141587	1961 0929
PRIORITY APPLN. INFO.:			DE <--	1960 1005

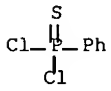
ED Entered STN: 22 Apr 2001
AB RPCl2 reacted in the presence of a tertiary base with R'SH to give RP(SR')Cl (I). I with mercaptans, thiophenols, alcs. or phenols gave RP(SR')XR'' (X = S or O) (II). II on addition of S yielded RP(S)(SR')XR'' or on oxidation with H2O2 RP(O)(SR')XR'' (III). E.g. to 61 g. EtSC2H4SH and 50 g. pyridine dissolved in 400 ml. toluene 79 g. EtP(SEt)Cl (b1 50°) was added slowly in a N atmospheric After stirring 1 hr. at 30° 16 g. S was added. The temperature rose to 90°. After cooling, the mixture was poured

into 500 ml. H2O. The oil that separated was collected, washed with dilute HCl and 3% NaHCO3 and distilled yielding 88 g. EtP(S)(SEt)SC2H4SEt, b0.01 94°. III were **prepared** analogously replacing the S by 36% H2O2. The I used as intermediates were: MeP(SMe)Cl, b12 45°; MeP(SEt)Cl, b1 45°; Me2C:CHP(SEt)(Cl, b1 76°; Me2CC(:CMe2)P(SEt)Cl, b1 96°; p-ClC6H4P(SEt)Cl, b1 122°; PhP(SEt)Cl, b1 92°. The following compds. RP(S)(SEt)R' were **prepared** in good yields (R, R', b0.01 given): Et, EtSC2H4O, 86°; Et, Et2NC2H4S, 97°; Et, p-MeSC6H4O, 110°; Et, 3,4-Me(MeS)C6H3O, 112°; Et, 2,4-Cl2C6H3O, -; Et, p-ClC6H4O, 104°; Et, p-ClC6H4S, -; Et, PhS, -; Et, 2,4-Cl(tert-Bu)C6H3O, -; Et, C6H11S, 85°; Et, EtO2CCH2S, 86°; Et, p-MeSC6H4S, -; Ph, EtSC2H4O, 150°; p-ClC6H4, EtSC2H4O, -; Me2C:CH, EtSC2H4O, 122°; Me3CC(CMe2), EtSC2H4O, -; Ph, EtSC2H4S, 128°; p-ClC6H4, EtSC2H4S, -; Me2C:CH, EtSC2H4S, -; Me2C:C(CMe3), EtSC2H4S, -; Et, tertBuO, -; Me, EtSC2H4O, 86°; Et, Cl3CCH2O, 72°; Et. Me3CCHMeO, 68°; Me, p-ClC6H4O, 110°; Me, EtSC2H4S, 98°; Me, PhS, -; Me, p-MeSC6H4S,-; Me, 3,4-Me-(MeS)C6H3O, -; Me, p-ClC6H4S, 112°; Me, 2,4.-Cl(tert-Bu)C6H3O, -; Me, p-O2NC6H4O, -; Et, p-O2NC6H4O, -; Me, p-MeSC6H4O, -; Me, EtO2CCH2S, 82°; Et, 2,4,5-Cl3C6H2O, -; Me, Me3CCHMeO, 68°; Me, 2,4,5- Cl3C6H2O, -; Me, 2,4-Cl2C6H4O, -; Me, tert-BuO, -. Also **prepared** were MeP(S)(SMe)(OC2H4SEt), b0.01 81° and EtP(S)(SMe)OC2H4SEt, b0.01 86°. The following compds. RP(O)(SEt)R' were **prepared** (R, R', b0.01 given): Et, p-Cl- C6H4O, 102°; Et, p-MeSC6H4O, 108°; Et, 2,4-Cl2C6H3O, 114°; Et, 3,4-Me(MeS)C6H3O, -; Et, Et2NC2H4S, 98°; Et, EtSC2H4O, 83°; Et, PhS, -; Et, p-ClC6H4O, -; Et, 2,4-Cl(tert-Bu)C6H3O, -; Et, EtSC2H4S, -; Et, EtO2CCH2S, 88°; Et, C6H11S, 84°; Et, p-MeSC6H4S, -; Me, EtSC2H4O, 84°; Me, p-ClC6H4O, 108°; Me, EtSC2H4S, 96°; Me, 3,4-Me(MeS)C6H3O, 112°; Me, p-ClC6H4O, 113°; Me, PhS, 98°; Me, p-MeSC6H4S, -; Me, 2,4-Cl(tert- Bu)C6H3O, -; Me, p-MeSC6H4O, 105°; Me, p-NO2C6H4O, -; Et, p-O2NC6H4O, -; Me, EtO2CCH2S, 82°; Me, Et2NC2H4S, 79°; Et, 2,4,5-Cl3C6H2O, -; Me, 2,4,5- Cl3C6H2O, -; Me, 2,4-Cl2C6H3O, -. Also **prepared** was EtP(O)(SEt)OC2H4SEt, b0.01 84.

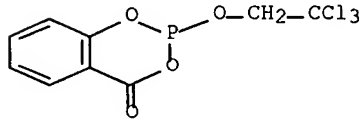
IT **644-97-3P**, Phosphonous dichloride, phenyl-
RL: PREP (Preparation)
(**preparation** of)
RN 644-97-3 HCAPLUS
CN Phosphonous dichloride, P-phenyl- (CA INDEX NAME)



IT **3497-00-5**, Phosphonothioic dichloride, phenyl-
(sulfur removal from)
RN 3497-00-5 HCAPLUS
CN Phosphonothioic dichloride, P-phenyl- (CA INDEX NAME)



IT **6083-02-9**, Ethanol, 2,2,2-trichloro-, ester with salicylic acid phosphite cyclic anhydride
(O-esters with S-Et ethylphosphonodithioate)
RN 6083-02-9 HCAPLUS
CN Salicylic acid, 2,2,2-trichloroethyl hydrogen phosphite, cyclic anhydride (7CI, 8CI) (CA INDEX NAME)



CC 33 (Organometallic and Organometalloidal Compounds)
IT **644-97-3P**, Phosphonous dichloride, phenyl- 3070-10-8P, Phosphonothioic acid, methyl-, O-ethyl O-2,4,5-trichlorophenyl ester 6588-28-9P, Phosphonochloridothious acid, ethyl-, ethyl ester 14443-47-1P, Phosphonothioic acid, methyl-, S-ethyl O-p-nitrophenyl ester 17534-63-3P, Phosphonodithioic acid, methyl-, O-p-chlorophenyl S-Et ester 23588-02-5P, Phosphonochloridothious acid, phenyl-, ethyl ester 29689-08-5P, Phosphonothioic acid, ethyl-, S-ethyl O-2,4,5-trichlorophenyl ester 31650-49-4P, Phosphonodithioic acid, methyl-, S-ethyl S-Ph ester 89600-02-2P, Phosphonodithioic acid, methyl-, O-[2-(ethylthio)ethyl] S-Me ester 89799-32-6P, Phosphonochloridothious acid, methyl-, ethyl ester 89980-16-5P, Phosphonodithioic acid, ethyl-, O-[2-(ethylthio)ethyl] S-Me ester 89980-18-7P, Phosphonodithioic acid, methyl-, S-ethyl O-[2-(ethylthio)ethyl] ester 89980-24-5P, Phosphonothioic acid, ethyl-, O-[2-(ethylthio)ethyl] S-Me ester 89980-26-7P, Phosphonothioic acid, methyl-, S-ethyl O-[2-(ethylthio)ethyl] ester 89980-32-5P, Phosphonotrithioic acid, methyl-, ethyl 2-(ethylthio)ethyl ester 90110-51-3P, Phosphonodithioic acid, methyl-, S-ethyl S-[2-(ethylthio)ethyl] ester 90229-75-7P, Phosphonochloridothious acid, methyl-, methyl ester 90324-36-0P, Phosphonodithioic acid, ethyl-, S-ethyl O-[2-(ethylthio)ethyl] ester 90324-37-1P, Phosphonodithioic acid, ethyl-, S-ethyl S-[2-(ethylthio)ethyl] ester 90324-56-4P, Phosphonotrithioic acid, ethyl-, ethyl 2-(ethylthio)ethyl ester 90416-13-0P, Phosphonotrithioic acid, methyl-, p-chlorophenyl Et ester 90482-12-5P, Phosphonodithioic acid, methyl-, O-tert-butyl S-Et ester 90644-53-4P, Phosphonotrithioic acid, methyl-, ethyl Ph ester 90723-07-2P, Phosphonodithioic acid, methyl-, S-[2-(diethylamino)ethyl] S-Et ester 90886-99-0P, Phosphonodithioic acid, ethyl-, O-tert-butyl S-Et ester 90945-39-4P, Phosphonotrithioic acid, ethyl-, p-chlorophenyl Et ester 91011-33-5P, Phosphonodithioic acid, methyl-, S-ethyl O-[p-(methylthio)phenyl] ester 91011-34-6P, Phosphonodithioic acid, methyl-, S-ethyl S-[p-(methylthio)phenyl] ester 91011-42-6P, Phosphonothioic acid, methyl-, S-ethyl O-[p-(methylthio)phenyl] ester 91011-56-2P, Phosphonotrithioic acid, ethyl-, ethyl Ph ester 91011-57-3P, Phosphonotrithioic acid, methyl-, ethyl p-(methylthio)phenyl ester 91134-91-7P, Phosphonodithioic acid, ethyl-, S-[2-(diethylamino)ethyl] S-Et ester 91135-03-4P, Phosphonotrithioic acid, ethyl-, 2-(diethylamino)ethyl Et ester 91343-95-2P, Phosphonodithioic acid, ethyl-, S-cyclohexyl S-Et ester 91343-97-4P, Phosphonodithioic acid, (2-methylpropenyl)-, S-ethyl O-[2-(ethylthio)ethyl] ester 91344-26-2P, Phosphonotrithioic acid, ethyl-, cyclohexyl Et ester 91344-27-3P, Phosphonotrithioic acid, (2-methylpropenyl)-, ethyl 2-(ethylthio)ethyl ester 91470-04-1P, Phosphonochloridothious acid, (2-methylpropenyl)-, ethyl ester 91499-07-9P, Phosphonodithioic acid, ethyl-, S-ethyl O-2,2,2-trichloroethyl ester 91801-46-6P, Phosphonodithioic acid, (p-chlorophenyl)-, S-ethyl O-[2-(ethylthio)ethyl] ester 92102-56-2P, Phosphonothioic acid, methyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 92148-17-9P, Phosphonodithioic acid, ethyl-, S-ethyl O-[p-(methylthio)phenyl] ester 92148-20-4P, Phosphonodithioic acid, methyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester 92148-22-6P, Phosphonothioic acid, ethyl-, S-ethyl O-[p-(methylthio)phenyl] ester 92257-86-8P, Phosphonotrithioic acid, methyl-, ethyl ester, ester with Et mercaptoacetate 92257-86-8P, Acetic acid, mercapto-, ethyl ester, ester with Et methylphosphonotrithioate 92257-87-9P, Phosphonodithioic acid, methyl-, S-ethyl ester, S-ester with Et mercaptoacetate 92257-87-9P, Acetic acid, mercapto-, ethyl ester, S-ester with

S-Et methylphosphonodithioate 92329-01-6P, Phosphonodithioic acid, ethyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 92329-03-8P, Phosphonothioic acid, ethyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 92401-66-6P, Phosphonodithioic acid, methyl-, S-ethyl O-p-nitrophenyl ester 92401-84-8P, Phosphonochloridothious acid, (p-chlorophenyl)-, ethyl ester 92659-79-5P, Acetic acid, mercapto-, ethyl ester, ester with Et ethylphosphonotrithioate 92659-79-5P, Phosphonotrithioic acid, ethyl-, ethyl ester, ester with Et mercaptoacetate 92659-84-2P, Acetic acid, mercapto-, ethyl ester, S-ester with S-Et ethylphosphonodithioate 92706-82-6P, Phosphonodithioic acid, methyl-, S-ethyl O-2,4,5-trichlorophenyl ester 93004-32-1P, Phosphonotrithioic acid, (p-chlorophenyl)-, ethyl 2-(ethylthio)ethyl ester 93048-31-8P, Phosphonodithioic acid, methyl-, O-2,4-dichlorophenyl S-Et ester 93048-33-0P, Phosphonothioic acid, methyl-, O-2,4-dichlorophenyl S-Et ester 93115-91-4P, Phosphonodithioic acid, methyl-, S-p-chlorophenyl S-Et ester 93115-93-6P, Phosphonothioic acid, methyl-, O-p-chlorophenyl S-Et ester 93484-18-5P, Phosphonodithioic acid, methyl-, S-ethyl O-1,2,2-trimethylpropyl ester 94408-79-4P, Phosphonothioic acid, ethyl-, O-2,4-dichlorophenyl S-Et ester 94408-80-7P, Phosphonodithioic acid, ethyl-, O-2,4-dichlorophenyl S-Et ester 94409-55-9P, Phosphonodithioic acid, ethyl-, S-ethyl O-2,4,5-trichlorophenyl ester 94489-53-9P, Phosphonodithioic acid, ethyl-, O-p-chlorophenyl S-Et ester 94489-55-1P, Phosphonodithioic acid, ethyl-, S-p-chlorophenyl S-Et ester 94489-60-8P, Phosphonothioic acid, ethyl-, O-p-chlorophenyl S-Et ester 94502-84-8P, Phosphonodithioic acid, ethyl-, S-ethyl O-p-nitrophenyl ester 94584-40-4P, Phosphonothioic acid, ethyl-, S-ethyl O-p-nitrophenyl ester 94601-13-5P, Phosphonothioic acid, methyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester 94624-74-5P, Phosphonodithioic acid, ethyl-, S-ethyl S-[p-(methylthio)phenyl] ester 94981-56-3P, Phosphonodithioic acid, ethyl-, S-ethyl O-1,2,2-trimethylpropyl ester 96294-18-7P, Phosphonodithioic acid, methyl-, O-(4-tert-butyl-2-chlorophenyl) S-Et ester 96634-97-8P, Phosphonochloridothious acid, (1-tert-butyl-2-methylpropenyl)-, ethyl ester 856952-49-3P, Phosphonotrithioic acid, phenyl-, ethyl 2-(ethylthio)ethyl ester 856952-52-8P, Phosphonotrithioic acid, (1-tert-butyl-2-methylpropenyl)-, ethyl 2-(ethylthio)ethyl ester 856953-05-4P, Phosphonodithioic acid, (1-tert-butyl-2-methylpropenyl)-, S-ethyl O-[2-(ethylthio)ethyl] ester 856953-58-7P, Phosphonodithioic acid, phenyl-, S-ethyl O-[2-(ethylthio)ethyl] ester 856954-51-3P, Phosphonodithioic acid, ethyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester 875825-75-5P, Phosphonodithioic acid, ethyl-, S-ethyl S-Ph ester 875830-96-9P, Phosphonothioic acid, ethyl-, S-ethyl O-[4-(methylthio)-m-tolyl] ester
RL: PREP (Preparation)
(**preparation** of)

IT **3497-00-5**, Phosphonothioic dichloride, phenyl-
(sulfur removal from)

IT **6083-02-9**, Ethanol, 2,2,2-trichloro-, ester with salicylic acid phosphite cyclic anhydride
(O-esters with S-Et ethylphosphonodithioate)

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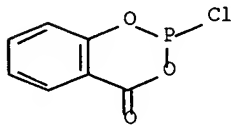
ACCESSION NUMBER: 1960:103480 HCAPLUS Full-text
DOCUMENT NUMBER: 54:103480
ORIGINAL REFERENCE NO.: 54:19700f-i,19701a-f
TITLE: Reactions of carboxylic acid-phosphorus trihalide systems. II. Salicylic acid
AUTHOR(S): Cade, J. A.; Gerrard, W.
CORPORATE SOURCE: At. Energy Research Estab. Harwell, UK
SOURCE: Journal of the Chemical Society (**1960**) 1249-53
CODEN: JCSOA9; ISSN: 0368-1769
DOCUMENT TYPE: Journal

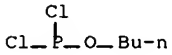
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 54:103480
ED Entered STN: 22 Apr 2001
AB cf. CA 49, 8093a. In the presence of a tertiary base, the bicyclic phosphorochloridite, 2-chloro-4-oxo-1,3-dioxa-2- phosphanaphthalene (I), **formed** by the reaction of salicylic acid (II) and PCl3, gave with acids, such as AcOH, an anhydride (III) and 4-oxo-1,3-dioxa-2-phosphanaphthalene 2-oxide (IV), but with BzOH a benzoyloxy derivative (V) was obtained. With HCl, I gave II and PCl3; IV behaved similarly. The butoxy derivative (VI) of I gave the acid and Bu phosphorodichloridite (VII). A reaction of II and a tervalent P halide appeared to involve a preliminary attack on the phenolic OH group, even in the presence of a base. II (13.8 g.), 15 cc. PhMe, and 15 g. PCl3 refluxed 3 hrs. and the **product** distilled gave 14 g. I, b14 129-32°. Similarly, 13.8 g. II and 30 g. PBr3 gave 8.45 g. 2-bromo-4-oxo-1,3-dioxa-2-phosphanaphthalene, b9 143°. II (13.8 g.) and 15.8 g. C5H5N in 50 cc. Et2O added at -10° to 13.8 g. PCl3 in 100 cc. Et2O and 23.5 g. C5H5N.HCl filtered off gave from the filtrate 11.5 g.I. BuOH (3.7 g.) and 3.95 g. C5H5N in 50 cc. Et2O left 1 hr. at -10° with 10.1 g. I gave VI, b0.03 99-100°, n20D 1.5250, d20 1.191, and 5.65 g. base hydrochloride. Reversing the order of addition did not significantly affect the yield. VI was obtained when an equivalent amount of the bromidite was used. Bu phosphorodichloridite (8.8 g.) in 50 cc. Et2O added at -10° to 6.9 g. II and 7.9 g. C5H5N in 100 cc. Et2O gave 86% VI. VI (2.5 g.) with cold H2O gave 1.2 g. II, m. 158-9°; the Et2O solution gave 0.6 g. oil. AcOH (7.25 g.) was added rapidly to 24.9 g. molten I, the mixture shaken, and volatile material removed at 20°/15 mm., then at 20°/0.1 mm. Distillation gave 5.5 g. AcCl, b. 50-2°, 1 g. impure AcOH, and 0.3 g. residue. The primary residue of 24 g. m. 92-124°. A portion (10 g.) in 20 cc. CHCl3 and 20 cc. heptane gave 2.2 g. II. AcOH (6 g.) and 20.25 g. I in 100 cc. C6H6 gave during 3 days 8.5 g. crystals. This solid (1.85 g.) in 30 cc. Et2O treated 2 hrs. with 0.9 g. PhNH2 gave 1.5 g. salicylanilide, m. 135°. Another sample of the solid gave 88% II. Volatile **products** of the primary reaction included HCl, AcCl, and AcOH. I (20.25 g.) in 50 cc. Et2O added dropwise at -10° to 14.8 g. EtCO2H and 7.9 g. C5H5N and the mixture filtered gave from the filtrate 18 g. residue. Attempted distillation gave 0.9 g. material, b0.05 120°, and 12.8 g. undistillable viscous residue. This **product** was IV, m. 97-100° (C6H6). The contents of the trap gave 10.7 g. propionic anhydride and a mixture of acid and III. AcOH, PrCO2H, and trimethylacetic acid gave by the same procedure the resp. anhydrides (71, 60, and 40.4%), together with IV of variable purity. The **products** obtained in the same way from 8.6 g. crotonic acid, 3.95 g. C5H5N, and 10.13 g. I were 5.55 g. base HCl, 1.15 g. recovered acid, 3.15 g. impure anhydride, and 4.4 g. of an unidentified compound In another experiment 3.3 g. of this substance m. 157-8°. BzOH (6.1 g.), 3.95 g. C5H5N, and 10.15 g. I gave 6.8 g. V, m. 107-10°. With C6H6 as solvent the yield was nearly quant. V was very sensitive to heat and moisture, sublimed at 120°/0.02 mm. and gave Ph salicylate. Dry HCl was passed at 0° into 20.25 g. I in 50 cc. Et2O, left 1 hr. and the volatile material in the trap removed at 20°/15 mm. II (6.1 g.) was filtered off. On attempted distillation, the filtrate decomposed with evolution of HCl. In another experiment volatiles were removed at 25°/0.01 mm. into a trap from which 2.2 g. PCl3 was obtained. The solid (3.7 g.) from the reaction of 2.4 g. AcOH, 1.6 g. C5H5N, and 4.04 g. I was degassed 2 hrs. at 50°/0.005 mm., dissolved in 20 cc. Et2O, HCl passed in, and after 0.5 hr. the volatile **product** removed at 20°/10 mm. Treatment of the residue with 20 cc. warm C6H6 dissolved the crystals, leaving 1 g. sirup. The solution gave 2.6 g. II. HCl was passed into 26.2 g. VI in 100 cc. Et2O at 0°, and after 2 hrs. the volatile matter removed at 15 mm. and then at 50/0.005 mm. and trapped in 2 lots. The less volatile portion of 9.2 g. gave 5 g. Bu phosphorodichloridite, b16 52-4°. This (3.85 g.) was identified by conversion with 3.26 g. BuOH and 3.48 g. C5H5N in Et2O into 5 g. Bu3PO4, b14 125-7°, n20D 1.432, which with AcCl gave 3.2 g. di-Bu acetylphosphonate, b0.08 78-80°, n20D 1.435; 2,4-dinitrophenylhydrazone, m. 80°. The primary residue gave 3.75 g. II and 0.6 g. orange **product**. Similar results were obtained when no solvent was used. I (10.15 g.) in 20 cc. Et2O added at -10° to 6.9 g. II and 7.9 g. C5H5N in 80 cc. Et2O, 6.1 g. of C5H5.HCl removed, CH2N2 added at 0° to the filtrate, kept overnight at room temperature, the Et2O removed, the solution extracted with aqueous Na2CO3, dried, evaporated, and distilled gave 6.55 g. Me salicylate, b17 103-4°. Acidification of the aqueous exts. gave 0.3 g. precipitate from which o-methoxybenzoic acid was not obtained.
IT **5381-99-7P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-
10496-13-6P, Butyl phosphorodichloridite
37912-73-5P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo-
109017-74-5P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-butoxy- **109342-59-8P**, 4H-1,3,2-Benzodioxaphosphorin-4-

one, 2-hydroxy-, benzoate
RL: PREP (Preparation)
(**preparation** of)

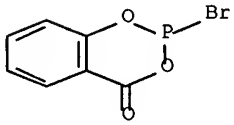
RN 5381-99-7 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- (CA INDEX NAME)



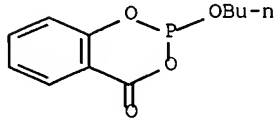
RN 10496-13-6 HCAPLUS
CN Phosphorodichloridous acid, butyl ester (8CI, 9CI) (CA INDEX NAME)



RN 37912-73-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- (9CI) (CA INDEX NAME)



RN 109017-74-5 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-butoxy- (9CI) (CA INDEX NAME)



RN 109342-59-8 HCAPLUS
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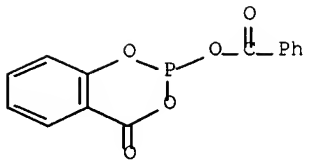


CC 10G (Organic Chemistry: Heterocyclic Compounds)
IT 102-85-2P, Butyl phosphite, (BuO)3P 919-22-2P, Phosphonic acid, acetyl-, dibutyl ester **5381-99-7P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro- **10496-13-6P**, Butyl phosphorodichloridite **37912-73-5P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-bromo- 80337-06-0P, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-oxide **109017-74-5P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-butoxy- **109342-59-8P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-hydroxy-, benzoate 876507-72-1P, Phosphonic acid, acetyl-, (2,4-dinitrophenyl)hydrazone
RL: PREP (Preparation)
(**preparation** of)

L91 ANSWER 30 OF 30 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1957:34925 HCAPLUS Full-text
DOCUMENT NUMBER: 51:34925
ORIGINAL REFERENCE NO.: 51:6668h-i,6669a-g
TITLE: Cholesteryl phosphates
AUTHOR(S): Montgomery, H. A. C.; Turnbull, J. H.; Wilson, W.
CORPORATE SOURCE: Univ. Edgbaston, Birmingham, UK
SOURCE: Journal of the Chemical Society (**1956**) 4603-6
CODEN: JCSOA9; ISSN: 0368-1769
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 51:34925
ED Entered STN: 22 Apr 2001
AB Cholesteryl di-Ph phosphate (I) with aqueous alc. alkali underwent both hydrolysis and ethanolysis. The major **products** were cholesteryl Ph (II) and cholesteryl Et H phosphates (III). The structures of II and III had been established by independent syntheses. II had been isolated previously when it was believed to be cholesteryl di-H phosphate (IV). IV itself, conveniently **prepared** by hydrolysis of cholesteryl phosphorodichloridate (V), **formed** a stable hemipyridine salt (VI). I (2.4 g.), 120 cc. alc., and 30 cc. 4N KOH refluxed gently 19 hrs. yielded 1 g. II, platelets, m. 160°, [α]D -28° (rotations measured in CHCl3 unless otherwise stated). Concentration of the mother liquors afforded 700 mg. white solid and 400 mg. sirup. Recrystn. of the solid yielded 350 mg. III, m. 156-7° (from EtOAc). In another experiment 49 mg. I was similarly treated with alkali and 1.6 moles liberated PhOH measured spectrophotometrically. II was recovered after similar treatment with alkali during 3 days. II (200 mg.), 5 cc. AcOH, and 0.5 cc. concentrated HCl warmed 10 min. at 100°, and the **product** diluted with H2O gave 150 mg. 3β-chlorocholest-5-ene (VII), m. 88-90°. The filtrates treated with aqueous cyclohexylamine afforded bis(cyclohexylammonium) Ph phosphate (VIII), m. 212° (decomposition). II (425 mg.) refluxed 27 hrs. with 6 cc. AcOH gave 310 mg. 3β-acetoxycholest-5-ene (IX), m. 112°, and VIII. I (100 mg.) and 3 cc. AcOH refluxed 24 hrs. gave 50 mg. IX and cyclohexylammonium di-Ph phosphate, m. 197-9°. Ph phosphorodichloridate (4.2 g.), 2.7 g. 2,6-lutidine (IXa), and 10 cc. C6H6 mixed and treated with 7.7 g. cholesterol (X) in 25 cc. C6H6, the mixture warmed to 50°, stirred 4 hrs. at room temperature and separated from 2.9 g. IXa.HCl, and the filtrate divided into 2 portions (A and B). A washed with dilute HCl and refluxed 0.5 hr. with iso-PrOH and H2O afforded 2.6 g. II, m. 160-2°. B mixed with 1.1 g. tetrahydropyran-2-ol and 1.1 g. IXa and set aside 40 hrs. yielded a sirup, presumably cholesteryl Ph tetrahydropyran-2-yl phosphate, which decomposed at 100° during 2 hrs. afforded 3 g. II. X (38.7 g.) in 150 cc. C6H6 added to 16.3 g. Et

phosphorodichloridate and 10.7 g. IXa in C6H6, the solution warmed to 40°, set aside 18 hrs., and 12 g. IXa.HCl filtered off, 100 cc. tert-BuOH added, the solution refluxed 0.5 hr., H2O added, and the **product** isolated gave 8 g. prisms, m. 123-4°, C54H9104P.H2O; titration of an aqueous alc. solution with aqueous KOH gave an equivalent weight of 852. The mother liquors evaporated and treated with EtOAc gave 6 g. crude III, which recrystd., m. 155-8°. Salicylic acid (69 g.) and 76.7 g. POCl3 heated to 150°, and maintained there 2 hrs., and the fraction, b0.02 116-25°, crystallized gave 39.6 g. anhydro(o-carboxyphenyl phosphorochloridate) (XI), prisms, m. 90-3° (from CCl4). XI (8 g.) in 30 cc. CHCl3 set aside overnight with 4 g. IXa and 14.2 g. X yielded 2.6 g. cholesteryl o-carboxyphenyl H phosphate (XII), m. 141-2°, [α]D -20° (alc.), which was readily soluble in dilute NaOH. XII (165 mg.) in AcOH heated 10 min. at 100° with 0.3 cc. concentrated HCl yielded VII. The crude C5H5N-containing substance **prepared** from 20 g. X was extracted with ligroine and the exts. deposited 7.5 g. V, m. 110° (decomposition), [α]D -31°. V (530 mg.) triturated with 1 g. PhOH and NaOEt (from 54 mg. Na and 2 cc. alc.), excess dilute aqueous KOH added, and the precipitate repurified gave 520 mg. I, m. 113°. X (20 g.) converted to crude V, and the **product** hydrolyzed by refluxing 1.25 hrs. with 600 cc. H2O, the precipitate dissolved in aqueous KOH, the solution filtered through Amberlite resin IR-120(H) and evaporated, the residue refluxed with C6H6 and H2O 4 hrs., and the **product** crystallized gave 10.7 g. IV, irregular prisms, m. 181° (from Me2CO and moist CCl4), [α]D -21° (in alc.). IV was insol. in warm dry C6H6, CCl4, or CHCl3, but dissolved readily in the presence of H2O. Azeotropic removal of the H2O caused IV to precipitate A less soluble, metastable **form**, m. 187°, was obtained by rapid drying of its aqueous gel. The precipitate from X in the foregoing experiment was recrystd. from C6H6 affording VI, m. 178° (with sintering and darkening), [α]D -36°. An identical compound was **formed** from pure IV and aqueous C5H5N. The substance was recovered when its solution in aqueous KOH was acidified with HCl.

IT **120526-38-7**
(Derived from data in the 6th Collective Formula Index (1957-1961))

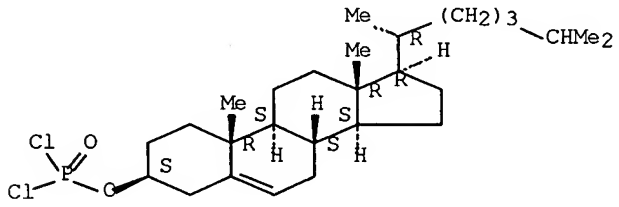
RN 120526-38-7 HCAPLUS

CN Cholesteryl phosphorodichloridate, pyridine deriv. (2:1) (6CI) (CA INDEX NAME)

CM 1

CRN 6901-51-5
CMF C27 H45 Cl2 O2 P

Absolute stereochemistry.

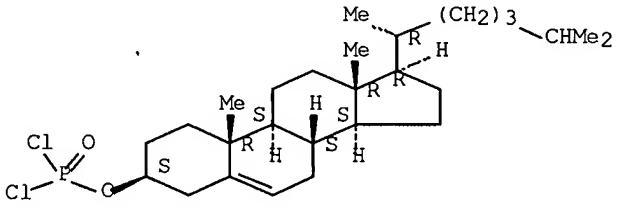


CM 2

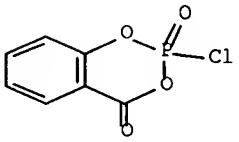
CRN 110-86-1
CMF C5 H5 N

IT **6901-51-5**, Cholesteryl phosphorodichloridate
(and its pyridine derivative)
RN 6901-51-5 HCAPLUS
CN Cholest-5-en-3-ol (3β)-, 3-(phosphorodichloridate) (CA INDEX NAME)

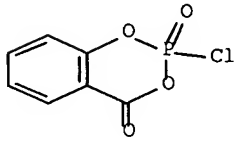
Absolute stereochemistry.



IT **5381-98-6**, Salicylic acid, phosphorochloridate, cyclic anhydride
(etc.)
RN 5381-98-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



IT **5381-98-6P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide
RL: PREP (Preparation)
(**preparation** of)
RN 5381-98-6 HCAPLUS
CN 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide (9CI) (CA INDEX NAME)



CC 10 (Organic Chemistry)
IT 604-35-3 13798-39-5 32277-64-8 120090-09-7
120526-38-7 122241-73-0
(Derived from data in the 6th Collective Formula Index (1957-1961))
IT **6901-51-5**, Cholesteryl phosphorodichloridate
(and its pyridine derivative)
IT **5381-98-6**, Salicylic acid, phosphorochloridate, cyclic anhydride
(etc.)

IT 701-64-4P, Phenyl phosphate, (PhO)(HO)2PO 910-31-6P, Cholest-5-ene, 3β-chloro- **5381-98-6P**, 4H-1,3,2-Benzodioxaphosphorin-4-one, 2-chloro-, 2-oxide 7664-38-2P, Phosphoric acid, cholesteryl esters 16545-55-4P, Cyclohexylamine, phosphates 57775-14-1P, Phenyl phosphate, (PhO)(HO)2PO, compds. with cyclohexylamine 103160-10-7P, Cholest-4-ene-4-propionic acid, 3-oxo- 120793-83-1P, Pyran-2-ol, tetrahydro-, ester with cholesteryl Ph phosphate 909264-03-5P, Cholesteryl ethyl phosphate, (C27H45O)(EtO)(HO)PO
RL: PREP (Preparation)
(**preparation** of)

IT 66778-71-0P, Cholesteryl phenyl phosphate
RL: PREP (Preparation)
(**preparation** of (C27H45O)(PhO)(HO)PO and (C27H45O)(PhO)2PO)

FULL SEARCH HISTORY

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=> d his nofile

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                D ALL
                SEL L1 RN

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L3            4 SEA ABB=ON  PLU=ON  L2 AND 1-6/P
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L4           52 SEA ABB=ON  PLU=ON  L2 NOT L3
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L20          99 SEA ABB=ON  PLU=ON  L18 OR L19
L21             QUE ABB=ON  PLU=ON  PY<20043 OR PRY<2004 OR AY<2004 OR
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L22           1 SEA ABB=ON  PLU=ON  L1 AND L21
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                MANUF? OR MFR# OR CREAT? OR FORM## OR FORMING# OR
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L25         272 SEA ABB=ON  PLU=ON  L17 AND L24
L26         181 SEA ABB=ON  PLU=ON  L17(L)L24
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L36         161 SEA ABB=ON  PLU=ON  L11/PRO
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                SAV L44 NWA492REGB/A

     FILE 'HCAPLUS' ENTERED AT 11:32:15 ON 23 OCT 2007
L45       14505 SEA ABB=ON  PLU=ON  L44
L46          25 SEA ABB=ON  PLU=ON  L45 AND L17
L47        8585 SEA ABB=ON  PLU=ON  L44/RCT
L48           7 SEA ABB=ON  PLU=ON  L47 AND L20
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                D SCAN
L49              7 SEA ABB=ON  PLU=ON  L48 AND L21
L50             24 SEA ABB=ON  PLU=ON  L25 AND L45
                D 1-5 KWIC
L51             25 SEA ABB=ON  PLU=ON  L46 OR L48 OR L50
L52             25 SEA ABB=ON  PLU=ON  L51 AND L21
                SAV L52 NWA492HCP/A
                DEL SEL
                SEL L1 AU
L53             55 SEA ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU OR "MOELLER,
                OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE,
                KLAUS-DIETHER"/AU)
                DEL SEL
                D L1 PA
                SEL L1 PA
L54             70 SEA ABB=ON  PLU=ON  "OXENO OLEFINCHEMIE G M B H
                GERMANY"/PA,CS,SO,CO
L55             25 SEA ABB=ON  PLU=ON  L53 AND L54

     FILE 'LREGISTRY' ENTERED AT 11:39:05 ON 23 OCT 2007
                D QUE L53

     FILE 'ZCAPLUS' ENTERED AT 11:40:06 ON 23 OCT 2007
                E FRIDAG D/AU
L56             QUE ABB=ON  PLU=ON  FRIDAG D?/AU
                D QUE L53
                E MOELLER O/AU
L57             QUE ABB=ON  PLU=ON  MOELLER O?/AU
                E MOLLER O/AU
L58             QUE ABB=ON  PLU=ON  MOLLER O?/AU
                E ORTMANN D/AU
L59             QUE ABB=ON  PLU=ON  ORTMANN D?/AU
                E WIESE K/AU
L60             QUE ABB=ON  PLU=ON  ("WIESE K"/AU OR "WIESE K D"/AU OR
                "WIESE KLAUS"/AU OR "WIESE KLAUS DIETER"/AU OR "WIESE
                KLAUS DIETHER"/AU)
L61             QUE ABB=ON  PLU=ON  (L56 OR L57 OR L58 OR L59 OR L60)

     FILE 'HCAPLUS' ENTERED AT 11:45:12 ON 23 OCT 2007
L62            203 SEA ABB=ON  PLU=ON  (L56 OR L57 OR L58 OR L59 OR L60)
L63             25 SEA ABB=ON  PLU=ON  L62 AND L54
L64             16 SEA ABB=ON  PLU=ON  L62 AND ?PHOSPHOR?
L65             34 SEA ABB=ON  PLU=ON  L55 OR L63 OR L64
L66             34 SEA ABB=ON  PLU=ON  L65 AND L21
                D 1-34 AU
                SAV L66 NWA492HCPIN/A
L67             25 SEA ABB=ON  PLU=ON  L52 NOT L66
L68              0 SEA ABB=ON  PLU=ON  L52 AND L1
L69              1 SEA ABB=ON  PLU=ON  L17 AND L1
L70              1 SEA ABB=ON  PLU=ON  L23 AND L1
                D SCAN
                D L1 CC
L71             QUE ABB=ON  PLU=ON  29/SC,SX
L72             QUE ABB=ON  PLU=ON  45/SC,SX
L73              2 SEA ABB=ON  PLU=ON  L23 AND L72
                D 1-2 AU
L74              3 SEA ABB=ON  PLU=ON  L25 AND L72
L75             87 SEA ABB=ON  PLU=ON  L25 AND L71
L76             49 SEA ABB=ON  PLU=ON  L23 AND L71
L77              2 SEA ABB=ON  PLU=ON  (L73 OR L74) AND (L75 OR L76)
L78              3 SEA ABB=ON  PLU=ON  (L73 OR L74) OR L77
L79              3 SEA ABB=ON  PLU=ON  L78 AND L21
L80             28 SEA ABB=ON  PLU=ON  L79 OR L67
                SAV L80 NWA492HCP/A
L81             27 SEA ABB=ON  PLU=ON  L80 NOT L66

     FILE 'CASREACT' ENTERED AT 11:56:06 ON 23 OCT 2007
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L82          21 SEA ABB=ON  PLU=ON  ("FRIDAG, DIRK"/AU OR "MOELLER,
                OLIVER"/AU OR "ORTMANN, DAGMARA"/AU OR "WIESE,
                KLAUS-DIETHER"/AU)
L83          30 SEA ABB=ON  PLU=ON  (L56 OR L57 OR L58 OR L59 OR L60)
L84          30 SEA ABB=ON  PLU=ON  L82 OR L83
L85           8 SEA ABB=ON  PLU=ON  L84 AND L54
L86          10 SEA ABB=ON  PLU=ON  L84 AND ?PHOSPHOR?
L87          15 SEA ABB=ON  PLU=ON  (L85 OR L86)
L88          15 SEA ABB=ON  PLU=ON  L87 AND L21
                SAV L88 NWA492CRCTIN/A
L89           4 SEA ABB=ON  PLU=ON  L42 NOT L88

     FILE 'STNGUIDE' ENTERED AT 11:59:33 ON 23 OCT 2007
                D QUE L88
                D QUE L66

     FILE 'CASREACT, HCAPLUS' ENTERED AT 12:00:36 ON 23 OCT 2007
L90          34 DUP REM L88 L66 (15 DUPLICATES REMOVED)
                     ANSWERS '1-15' FROM FILE CASREACT
                     ANSWERS '16-34' FROM FILE HCAPLUS
                D L90 1-34 IBIB AB
                D QUE STAT L89
                D QUE STAT L81

     FILE 'CASREACT' ENTERED AT 12:02:26 ON 23 OCT 2007

     FILE 'STNGUIDE' ENTERED AT 12:03:26 ON 23 OCT 2007

     FILE 'CASREACT, HCAPLUS' ENTERED AT 12:03:45 ON 23 OCT 2007
L91          30 DUP REM L89 L81 (1 DUPLICATE REMOVED)
                     ANSWERS '1-4' FROM FILE CASREACT
                     ANSWERS '5-30' FROM FILE HCAPLUS
                D L91 1-4 IBIB AB FHIT
                D L91 5-30 IBIB ED ABS HITSTR HITIND
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